Your vital monthly guide to the CPC scene

AMSTRAD ACTION

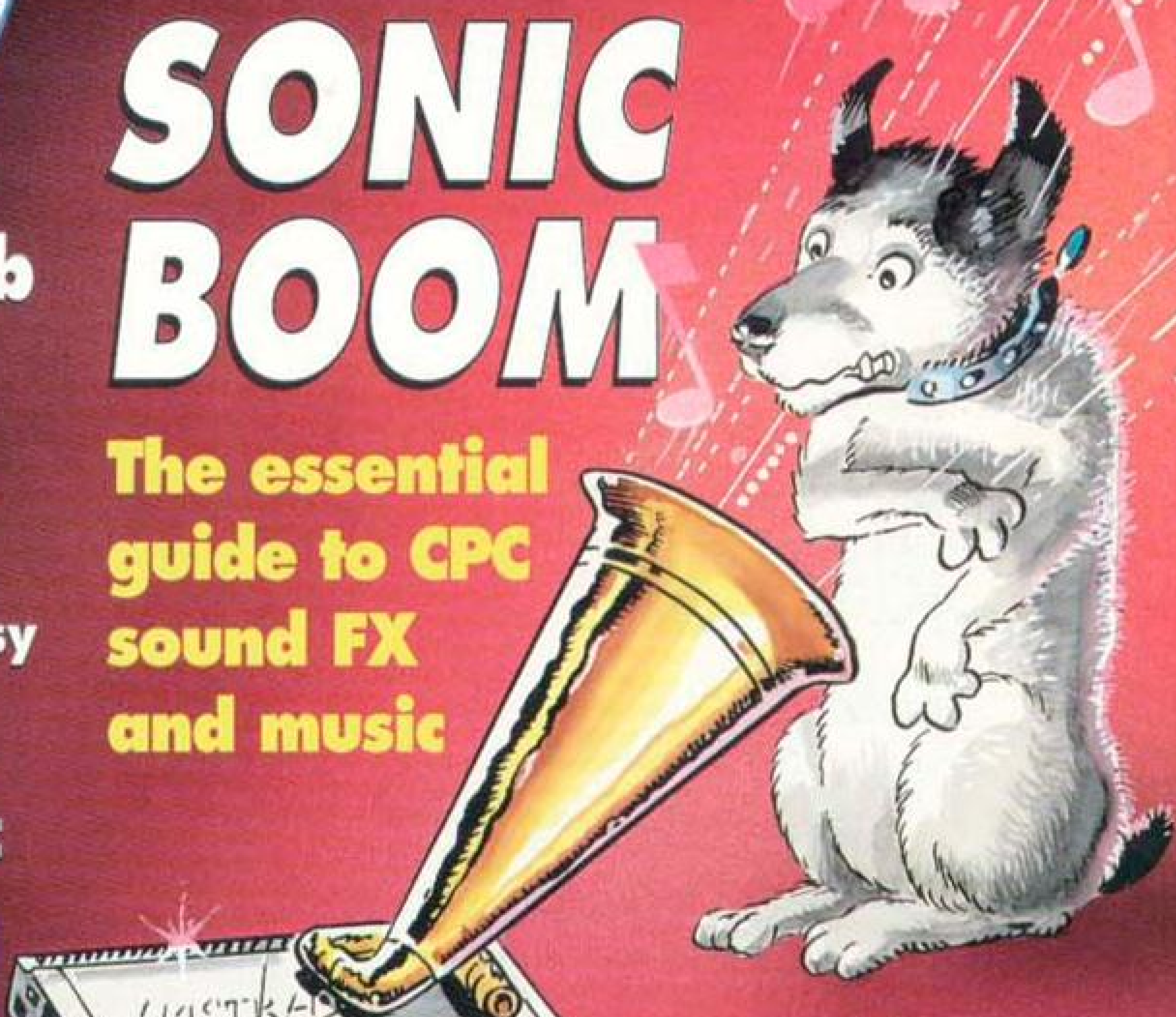
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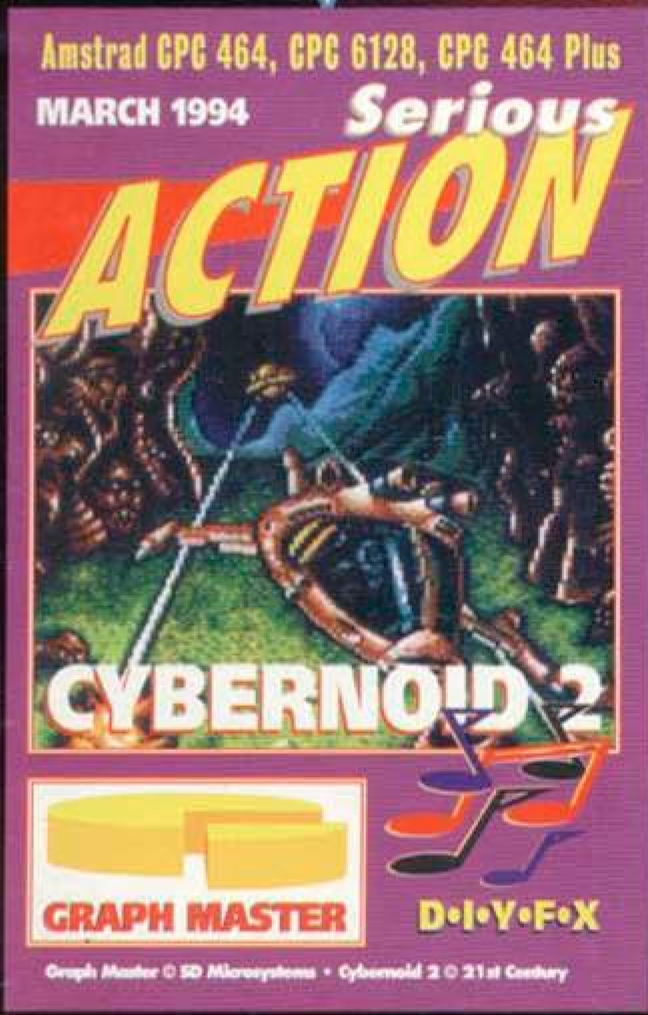
Get a piece of the action with these 3 superb programs...

- Cybernoid 2 – an AA 90% rating winner
- Graph Master – the easy way to chart success
- D•I•Y•F•X – make some noise on your CPC

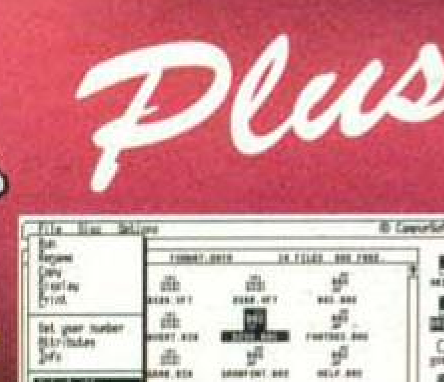
SONIC BOOM

The essential guide to CPC sound FX and music





Plus

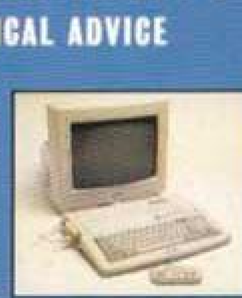


- Is DES set to do for the CPC what Windows did for the PC?

● TOP TIPS ● FIRST REVIEWS ● BEST TECHNICAL ADVICE



CPC



PLUS

Future PUBLISHING
Your guarantee of value
NOT an official Amstrad publication

Line-

Serious stuff



Cover feature



Leisure zone







-up

Regulars

Serious ACTION

So, let's have a butcher's at this month's covertape...





Cybernoid 2

Space Pirates are to be avoided. Unless you've got a gun and a grudge, of course. In which case, wade in with weapons blazing and blast 'em. And that, basically, is what *Cybernoid 2* is all about.



Graph Master

Graphs for all occasions, from pie charts to a yearly 3D histogram. You feed in the numbers, it produces the graphs. So whatever data you want to show off, *Graph Master* gives you quick, classy results.



D•I•Y•F•X

This stands for Do It Yourself (sound) FX, and that just about sums up what this program's function is. Written by our very own Dr H Happening, it enables you to make your CPC produce every sound it's capable of producing without having to delve into any complicated stuff like programming.

Turn the page for full details on the covertape



Serious ACTION



Question: what have envelopes, pies and shooting people got in common? Nope, not the next Quentin Tarantino film. Give up? Then here's Clur Hodgson with the earth-shattering answer.

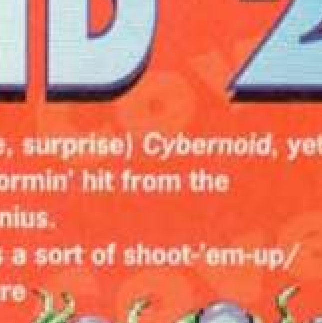
CYBERNOID 2

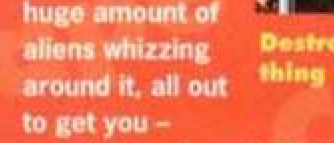

Get to the exit of the level before your time runs out and with 1,500 credits and you're rewarded with a huge bonus.

Your favourite Amstrad magazine is in danger of fast becoming a Raffaele Cecco fanzine. This month we have yet another of his classic, Past Mastergames gracing our covertape – *Cybernoid 2*, the sequel to (surprise, surprise) *Cybernoid*, yet another stormin' hit from the programming genius.


Make it through this one safely and you're rewarded with a backwards gun.

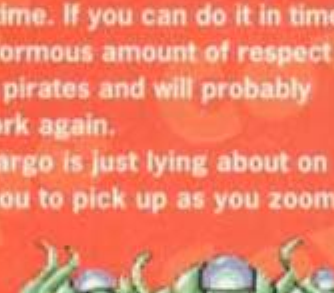
Cybernoid 2 is a sort of shoot-'em-up/platform/adventure-type game. It's set on a series of levels that consist of a huge number of flip screens. Each screen has a huge amount of aliens whizzing around it, all out to get you – aren't they always? They're not just being vicious for the fun of it though, because this time you're the baddie – they're just trying to protect their stuff falling off the back of a lorry as it were.


Destroy the big lumpy thing with a seeker.



You're a space pirate on a mission to collect 1,500 credits worth of hot cargo within a certain time. If you can do it in time you'll earn an enormous amount of respect from your fellow pirates and will probably never have to work again.

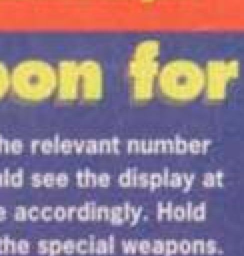
Sometimes cargo is just lying about on the ground for you to pick up as you zoom past in your devastatingly-equipped ship. But most of the really valuable stuff is in transit, being carried by one of the many alien ships you come across on

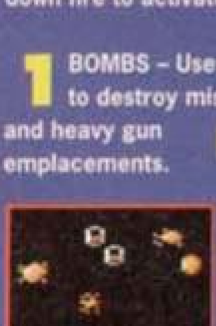

Bouncing bombs should do the trick here.

A weapon for every occasion

To select a weapon just hit the relevant number on your keyboard - you should see the display at the top of the screen change accordingly. Hold down fire to activate any of the special weapons.

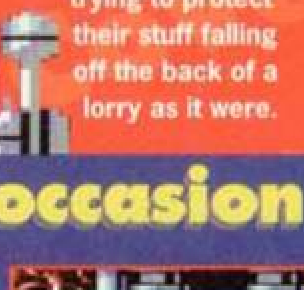
1 BOMBS – Use these to destroy missiles and heavy gun emplacements. ▶



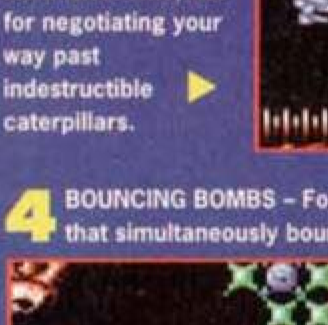


2 TIME BOMBS – When dropped out of the back of your ship they wait for a few seconds and then blow up, destroying anything nearby. ◀

3 DEFENCE SHIELD – Gives total invulnerability for a short time; use for negotiating your way past indestructible caterpillars. ▶

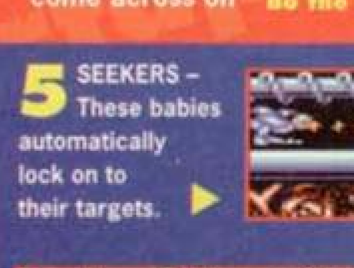


4 BOUNCING BOMBS – Four destructive blobs that simultaneously bounce around the screen destroying everything in their path – useful against any awkwardly-positioned blocks. ◀



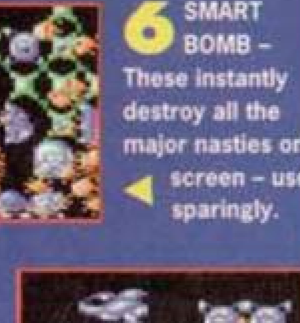
5 SEEKERS – These babies automatically lock on to their targets. ▶





6 SMART BOMB – These instantly destroy all the major nasties on screen – use sparingly. ◀

7 TRACK ROBOT – These travel around the edge of the screen and destroy everything they touch. ▶



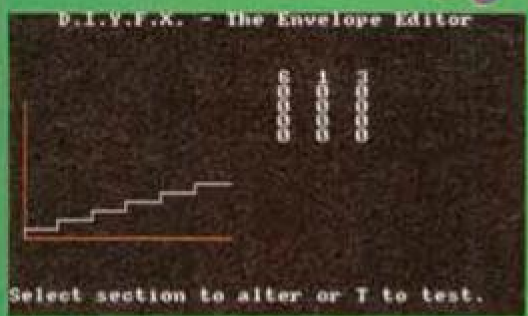
D•I•Y•F•X

This extra little program, which you'll find at the end of the covertape, is for designing volume envelopes easily (*in other words, it's for making your CPC make noises; check out the feature on page 15 for a full explanation – Jargon Ed*). It works with the standard BASIC ENV command's parameters, so you'll be able to paste the values from the program straight into your own sound effect configurations.

The program is really very easy to use as well. Simply hit one to five, depending on which section of the envelope you want to enter, and give the three values, separated by commas, pressing RETURN at the end.

To test the sound, instead of hitting a number, hit 'T', and the envelope will be played in E. Look, it'll all make sense once you've read the feature, okay.





Well it beats the horrible taste you get in your mouth from licking envelopes.

your way round the game. The only way to get hold of those goodies is to shoot the transport ships out of the skies – the pilots will promptly drop their cargo, which will land safely on the surface below, just crying out for pirates to come by and pick up.



At the front of your ship is a standard gun which will kill most of the smaller aliens. But for the bigger, nastier enemies you'll need to utilise the range of special weapons available to you. You have an unlimited number of shots when you're using the gun, but you only have a limited supply of the special weapons (how many you've got left of a particular weapon is displayed in the window next to the picture of the weapon you're using).



Ooops, I didn't mean for that to happen – what a waste of a good pair of trackers.



If in doubt use a smart bomb (and no, we're not going to make any jokes about bombs of a lesser intelligence).

You can use keyboard controls or a joystick to control your ship. Only three directions are available; left, right and up – gravity will take care of the downwards movements. To use the joystick or change the key controls enter 2 on the intro screen to get to the 'define keys' screen, then just type in your chosen keys or move the joystick accordingly. The controls when you first load the game are:

Left	O
Right	P
Up	Q
Fire	Space

Now for a few tips on playing this stormer of a game. Sometimes it's tough to protect your ship and find the weapon you want at the same time. When you travel on to a new screen hit five to set up your seekers ready for use. There are five on board your ship so it doesn't really matter if you waste one in the panic on unfamiliar.

Use your shield sparingly – there's only one on your ship so it's not worth wasting it on a screen which you could get through without having to resort to your shield. And finally, don't just storm through the screens as fast as you can – you need to kill as many aliens as possible because you can't finish the game unless you manage to accumulate enough cargo.

Good luck, and be careful out there.



The missiles won't launch until you get close.

Cheat box

Just in case Cecco's got you stumped this time, here's a nifty little cheat to give you infinite lives. On the intro screen enter the define keys screen by hitting 2 on the keyboard. Then type ORGY (O as left, R as right, G as up and Y as fire). You should hear a change in the music if you're doing it right. When you're back on the intro screen hit two again to get to the define keys section and enter the keys that you wish to use to play the game. Now hit 1 to start the game and you will be blessed with immortality.

Loading instructions

Getting started

To load up either side of the tape, simply rewind it, hold down CONTROL and press ENTER. Owners of 6128s or 664s will have to switch their machines to tape by typing |TAPE first.

464 owners beware

For some inexplicable reason the menu system created for side one of this month's covertape doesn't seem to work on all standard Amstrad 464s. Clur and Simon have been scratching their heads for days now and can't come up with a reason why. If any one out there can we'd love top hear from you. Send your solutions to Simon And Clur are Thick at the usual address.

Anyway, to use the *Graph Master* programs and *D•I•Y•F•X* on the 464 you will need to run each program separately. To do this type RUN" and then the relevant program name as shown in the list below, then hit return and press play on your datacorder.

PROGRAM	NAME
Yearly Histogram	GM1
Histogram	GM2
Yearly 3D Histogram	GM3
3D Histogram	GM4
Pie Chart	GM5
Line Graph	GM6
Bar Chart	GM7
Comparative Bar Chart	GM8
Time Chart	GM9
D•I•Y•F•X	DIYFX

Disk not tape

If you've got a disk drive and you want to get a disk version of this month's tape it's easy. Whip out your scissors and cut off that token at bottom of this page, chuck it in an envelope along with your name and address and a cheque or postal order for £2 made out to Ablex Audio Video, then send off the whole kit'n'kaboodle to:

AA102 Disk Offer,
Ablex Audio Video,
Harcourt, Halesfield 14,
Telford, Shropshire TF7 4QD.

Loading troubles?

We make the greatest efforts to ensure our covertapes work properly, but if you've tried all that and your tape's still not loading then pop it in the post (include your name, address and a brief description of the problem) to:

AA102 Covertape returns,
Ablex Audio Video,
Harcourt, Halesfield 14,
Telford, Shropshire TF7 4QD
☎ 0952 680131

Please do not return faulty tapes to the AA office. There is no point. We cannot replace them here. Send them to Ablex, not us. Send them to us and it'll take you twice as long to get your tape back (if at all), and it's much more likely to go missing in the post... or get eaten by Simon.

Disk 102 Token

Graph Master

Impress your friends, astound your neighbours, amaze your second cousins removed – produce stunning visual representations of numerical data in mere seconds.

Whether you're trying to impress someone with the batting averages of the local cricket team, convince a company that your phone sanitation service will increase their productivity or get a few extra marks on your homework by making it more legible, the best way to present reams of data in an easily digestible form is to illustrate it. And graphs are the perfect way to do that.

Graph Master takes the grind out of generating charts. The graphs and charts that you produce with this program can be printed out to be stapled to your homework or used within DTP programs as you would clip art.

When you load the first side of the tape you'll be faced with a menu of the various graph options (actually, option A is *D•I•Y•F•X* – so just ignore that if you want to use *Graph Master*).

Each of the nine options you see are separate programs and so have to be loaded from tape. The first time you use the program work through the options one-by-one and take a note of the tape counts for the various bits of code. This'll save you loads of time and hassle in the future.

At the beginning of every graph program the first question you'll be asked is what you want to call the file. Whatever name you choose will be the file name that the chart will be saved as. The file on disk will actually be called the file name and then .G-M (eg, if you name the file flip, the file name on tape or disk will be FLIP.G-M).

You must remember, though, if you're planning on saving the file on to tape, to prefix the file name by an exclamation mark when you are asked to name it (eg, !FILE) otherwise the file will not save on to tape – it will look for a disk.

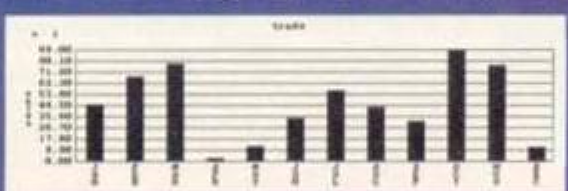
Next you'll be asked a range of questions dealing with things like what you want to call the graph (that is, the name that will appear on-screen or on print-outs, as opposed to the filename) and naming the axes. When it comes to axes, if you get confused over your X's, Y's (which is horizontal and which is vertical), remember the mnemonic X is 'a cross' (x is 'across', geddit?). Then it's just a case of inputting the data (the on-screen prompts are easy enough to follow), sitting back and watching *Graph Master* do its stuff.



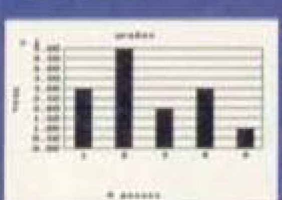
Options one to nine are explained in depth below. For full instructions for option A (DIYFX) see the previous page.

Chart Attack

If you're not sure just which graph or chart would best suit the statistics you want to represent in a visual form, here, to help you out, is a brief description of the various graphs that the program has on offer.



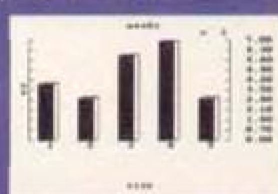
1 Yearly histogram (X-axis = January to December, Y-axis = values)
Histograms display information as a series of columns, one for each section on the X-axis; the bigger your number the higher you go.



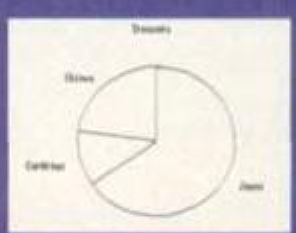
2 Histogram (X-axis = labels, Y-axis = values, both variable in size)
The same as graph one but with definable X-axis sectors.

3 Yearly 3D histogram (X-axis = January to December, Y-axis = values)
Basically, this graph is exactly the same as number one but the end results are a bit more flashy.
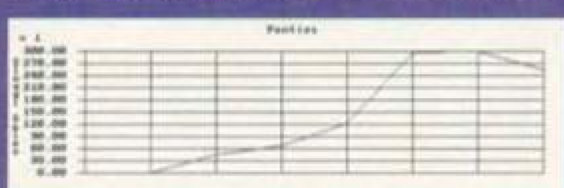




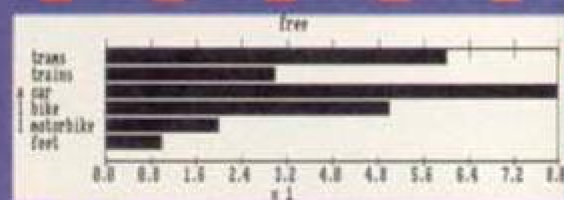
4 3D histogram (X-axis = labels, Y-axis = values, both variable in size)
Virtually the same as number two but with that extra dimension to the finished graph.



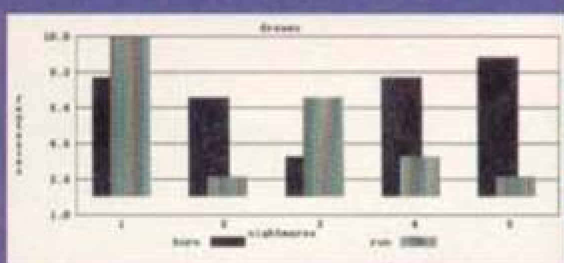
5 Pie chart (Input labels and values to generate a pie chart)
Each wedge is a proportional representation of a percentage – the bigger the wedge, the bigger the percentage. The circle, surprise, surprise, represents 100 per cent.



6 Line graph (X-axis = labels, Y-axis = values, both variable in size)
Values are plotted according to the X,Y co-ordinates and the points are joined together with a line – a good one for showing trends.

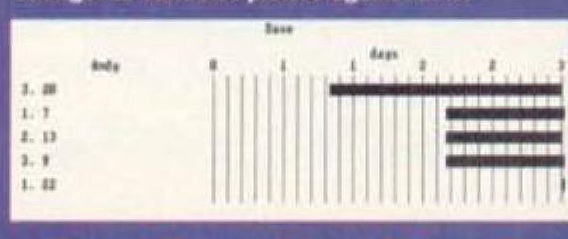


7 Bar chart (X-axis = labels, Y-axis = values, both variable in size)
A histogram swivelled through 90 degrees.

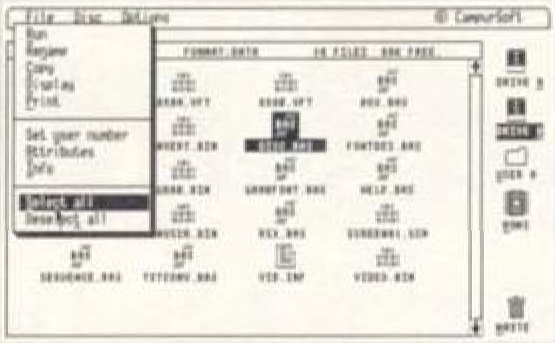


8 Comparative bar chart (X-axis = labels, Y-axis = values, both variable in size)
A bar chart representing not only amounts of particular variables but the change in those variables over a particular time period – useful for comparing two sets of data.

9 Time chart (X-axis = time divisions, Y-axis = labels, both variable in size)
Changes in variables plotted against time.

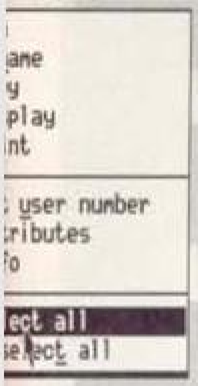


WinDES for windows



DES – a program so good it's worth buying a ROMbox for if you haven't got one.

We reckon *DES* could change the way you use your CPC forever. It certainly makes life a lot easier. It's a new ROM and disk-based WIMP system that lets you perform disk and ROM operations easily and rapidly without having to delve into BASIC. How? Well, WIMP stands for Windows, Icons, Menus and Pointers and it's the combination of things that make *DES* such a user-friendly program. For more details on exactly how it works, check out our review on page 36 (where you'll also discover that we have been mightily impressed by *DES*).

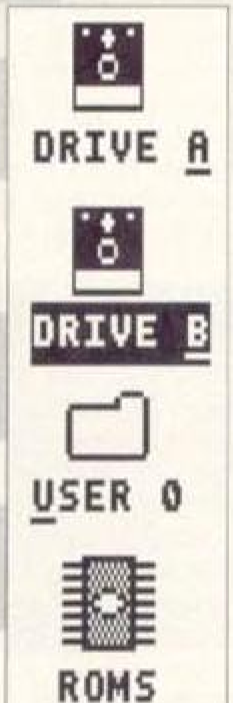


If you wanted to buy *DES* it'd set you back a very reasonable £24.99 on ROM (£15.99 on disk). But that's still £24.99 more than you'd have to pay if you win this exclusive *Amstrad Action*/Campursoft competition. Yep, we're giving away two copies of the ROM-based version of *DES*. And all you have to do to win one is answer the following questions, then come up with a tie-breaker suggestion:

The questions

1 Which Des, along with his group the Aces, had a hit in the 60s with *The Israelites*?

a) Des Lynham
b) Desmond Dekker
c) Des O'Connor



2 *DES* uses windows to make your computing life easier. Where are the largest windows in the world at the moment?

a) The Skegness Fun'n'Splash Pleasuredome, UK.
b) The National Geographical Institute Botanica Greenhouse, Georgia, USA.
c) The Palace of Industry and Technology, Paris, France.

3 Menus are another device that *DES* uses. Which of these dishes would you be most likely to find on the menu in a Chinese restaurant?

a) Deep Pan Seafood Pizza.
b) Sizzling Fajitas
c) Egg Fu Yung.

The tie-breaker

And finally, before that superb slice of silicon can be yours, you have to come up with a tie-breaker suggestion. All you have to do is come up with another three-or four-letter name that, like DES, could be an acronym for a Desktop Environment System. See what you can make out of names like DAVE, ANDY, CLUR (ah, what a shame, SIMON's ruled out), MARK, MARY or anything else you can come up with.

The address bit

Then, all you have to do is write down all your answers on a postcard or sealed down envelope, and send the whole lot off to us here at:

DES compo,
Amstrad Action,
Future Publishing,
30 Monmouth Street,
Bath, Avon BA1 2BW.



Amscene

What's hot and not what's not on the CPC news front.

Peace and harmony



He might not look it, but AA Ed Dave's only human.

A month ago, you owned a computer with a text-only form of input – boring BASIC when you turned it on. But no all that's changed with DES – a package that, as well as putting a nice and pretty front end onto your machine, has cut a path for other programmers to follow, as they'll soon be able to program using DES facilities. As the CPC catches up with the GUI (Graphical User Interface) age, it begins to look as if anything's possible – which nutter'll be the first to hook up a CD drive? (I bet Simon'll give it a go.)

This month marks more than a desktop though, and now we're well and truly into 1994, things still aren't slowing down for the CPC on the home front. With Campursoft's commitment to producing top quality software comes a system that'll allow anybody else to do exactly the same.

Once again the CPC is being pushed forward in leaps and bounds by just a handful of dedicated people long after the industry took it for dead – are you beginning to spot a pattern yet? If you don't, write in and I'll be happy to make you look stupid but if you do, we think you know how you can help...

DAVE

Kits cut Rombo prices

Avatar have managed to slash the prices of two popular ROMBO products by offering them in kit form.

The company is now offering DIY kit versions of the ROMBO ROMboard for just £18 (down from £25) and the ROMBO video digisiter, *VIDI* , for £45 (a considerable reduction of £20).

Both the kits contain everything that the user will need to build complete, fully working versions of the products, including instructions, though you will need to know what you're doing with a soldering iron.

VIDI comes with a video cable to connect it to a video source and the software to run it all on disk.

For further details on both these products you can contact Avatar by phoning them on ☎ 0274 602180.

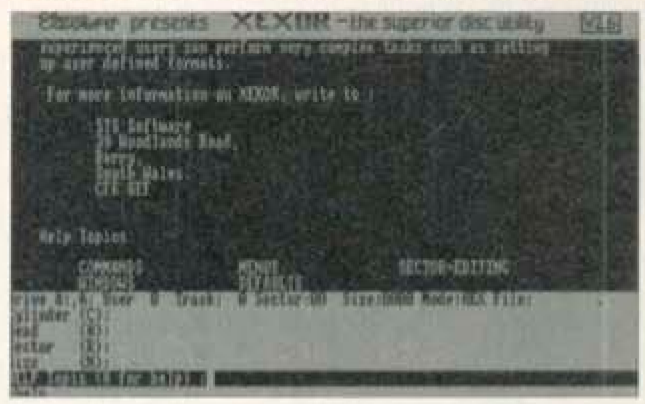
In memorium

It is with great sadness that we have to announce the untimely death of David Carter who for some years ran the much-respected Penguin Public Domain library. He was also an active member of WACCI and contributed artwork to some of their issues. David was in his early 20s.

David was a diabetic sufferer, and so as a small tribute, We here at *Amstrad Action* have decided to donate the money we raised from the sell-off of 3-inch disks through our subs letter recently to the British Diabetic Association.

We would like to express our deepest sympathy for David's family and friends.

ParaDOS and Xexor in cut-price package



STS's *Xexor* is now available in a double pack with Quantum's *ParaDOS* for just £30.

Quantum and STS are dropping the price of both *ParaDOS* and *Xexor*, and also offering a special bundle comprising both programs retailing for £30.

ParaDOS, the ROM-based high capacity disk operating system, has had £5 shaved off its price and now sells for £20, while the suite of disk utilities that goes by the name of *Xexor* has dropped in price from £20 to £15. Buy both together, and it'll set you back just £30.

You can ontact Quantum Computing on ☎ 0446 722599.

It's showtime for WACCI

Apart from producing a darned fine fanzine, providing invaluable helpline services and running an impressive PD library, WACCI also turn up at every All-Formats Computer Fair to sell software and hardware, show off the latest CPC products and, generally, meet up with other CPC users.

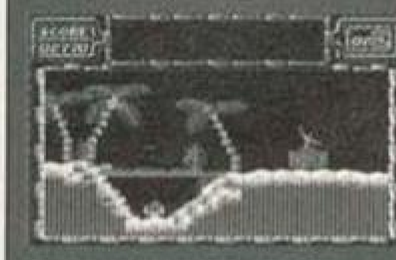
So if you to pop along and see what WACCI are all about, or you just want to check out the latest stuff on the market, the next few All Formats Fairs will be:

Feb 27th, Glasgow
Woodside Hall, St George's Cross
March 6th, Bristol
Brunel Centre, Temple Meads.
March 13, London
Tolworth Recreation Centre, A3 Surbiton, London.
March 19th, North West
Haydock Park Race Course.
March 20th, West Midlands
National Motorcycle Museum, J6 M42 between Birmingham and Coventry.

● For further information on All Formats Fairs ☎ 0608 662212.

Trakers direct

Past Mastergame *Trakers* is now available direct from the authors, Scott and Gary Kennedy for just £5 if you send along a disk.



***Trakers* is now just a fiver.**

The game, which scored 92 per cent in issue 95, stars an eponymous droid who's been accidentally left behind on a hostile planet and first rate puzzley platform action ensues.

If you don't send a disk you have to pay for postage. Cheques can be made payable to either Gary or Scott Kennedy. Write to: 32 Lostock Road, Seedley, Salford, Greater Manchester M5 2LH.

Quantum and STS are on the move

Both Quantum and STS have moved to new premises. Quantum can now be found at 11 Court Road, Barry, South Glamorgan ☎ 0446 722599. STS new address is 298 Holton Road, Barry, South Glamorgan. For the moment, STS phone enquiries will have to made using the Quantum number.

Corrections

● *Megablasters*, the *Dynablasters* clone we reported last month, will not be released into the Public Domain. It will instead be a full-price commercial release. No firm release date has yet been set, but you can guarantee AA will be there first with the review.

● Bonzo's Scrapyard is not defunct like we said in last month's further reading column. It is still very much active, is in direct contact with Avatar and has given *CPC Contact* full permission to reprint Bonzo stuff. Apologies for any inconvenience. We will have more information about what Bonzo are all about in next month's issue.

Amscene Directory



Some call it the essential guide for all CPC users. Others call it a Yellow Pages for the CPC. Yet more call it a small red planet near the Barnet by-pass. Strange that. If you want to be included in the Directory, or you know of any information that needs to be updated, write to: Amscene Directory, Amstrad Action, Future Publishing, 30 Monmouth Street, Bath, Avon BA1 2BW.

PD Libraries

Amsof
✉ Lissenly, Cloyne, Middleton, Ireland
Large range of European stuff.

Braysoft
✉ 2 St Margaret's Road, Hayling Island, Hants, PO11 9BP.
3-inch disks only.

Colrob PD
✉ 9 Aviemore Road, Hemlington, Middlesborough
New tape-only PD library

Dartsma
☎ 081 855 7790
✉ 49 Heavitree Road, Plumstead, London SE18 7QX.
Note the change of address. They have also taken over Debbie Howard's Adventure PD.

Demon
✉ 47 Hilton Avenue, Hall Green, Birmingham B28 0PE
3.5-inch disk drive owners might like to investigate this one.

Disk PD
✉ Lower Dexbeer, Dexbeer, Holsworthy, Devon EX22 7LA.
☎ 0288 82348
Small but perfectly formed.

GD PD
✉ 49 Woodville, Barnstaple, Devon EX31 2HL
New library with a large selection.

Image PD
✉ Darren Dodds, 15 Elmwood Drive, Ponteland, Newcastle-Upon-Tyne NE20 9QQ
Also provides a digitising service.

PD Fun
✉ 41 Michaelgate, Kirkby Lonsdale, Via Carnforth, Lancs LA6 2BE
A policy of 'no serious software.'

Presto PD
✉ 119 Pwll Street, Landore, Swansea, West Glamorgan SA1 2PB.
They even offer stuff on 5.25-inch disks.

Signal Software
✉ 83 Longleat, Great Barr, Birmingham, West Midlands B43.

Sheepsoft
☎ 0446 736529
Based in Wales, of course. Baaaaa

Sleepwalker PD
✉ Disk software: Joe Moulding, 9 Meeting House Lane, Balsall Common, Nr Coventry CV7 7FX
Cassette software: 75 Nightingale Road, Edmonton, London N9 8PX.
Special offer to *AA* readers – if you send Joe a disk he'll send you a free selection of PD. Only one selection per person, please.

The Vault
✉ 43 Windfield Gardens, Clybaun Road, Galway, Ireland.
☎ 010 353 91 28204
A new but rapidly expanding library with lots of European software.

Fanzines

The Eliminator
✉ 14 Station Road, Riccall, York, North Yorkshire YO4 6QJ
We don't really know much about this one because no-one's actually sent us a copy yet (hint, hint).

CPC User
☎ 0329 234291
The UAUG's fanzine.

CPC Undercover
✉ 37 Trimingham Drive, Brandlesholme, Bury, Lancashire
A technically-minded fanzine that's also on the look out for writers.

Ultra Games
✉ 20 Lancaster Terrace, Chester-Le-Street, Co Durham, DH3 3NW
£1-worth of cassette-based multi-format fanzine from the man who used to produce Am-Com.

User Groups

Amstrad Contact
☎ 0403 753348
Sussex-based group run by Dave Muggeridge that also runs a technical helpline for CPC users.

UAUG (United Amstrad User Group)
☎ 0329 234291
An *AA*-recommended user group.

WACCI
☎ 0602 725108
If you're seriously into the techy side of the CPC then you really shouldn't be missing out on WACCI.

Independent Software Companies

Avatar
☎ 0442 251705
Suppliers of Phil Craven products, and a few of the Bonzo titles (and don't ask what Bonzo titles are – it'd take too long to explain).

BoxForm
☎ 051 336 2668
A software house specialising in, would you believe, betting software. It takes all sorts in this world.

Campursoft
☎ 041 554 4735
You name it, they do it, really – take a look at the interview in ish 96.

DMP Software
✉ 89 Wolverhampton Road, Codsall, Wolverhapton WV8 1PL
Over 30 home-programmed games and serious programs on both tape and disk.

Gary & Scott Kennedy
☎ 061 736 1204
Authors of *Trakers*, a truly great CPC game (don't argue).

New Age Software
☎ 01049-711-4201920
Responsible for *Zap'T'Balls*, the excellent *Soundtrakker*, and, hopefully, a few more titles pretty soon.

Quantum Computing
☎ 0446 722599
The new breakaway sect of STS that looks set to pick up where the original good plans fell short.

Radical Software
☎ 081 856 8402
Still releasing top-quality, new software for the CPC. If you've written a program you think is worth releasing this lot would love to hear from you.

SD Microsystems
☎ 0760 720381
Specialists in business software – take a look at the feature in *AA93*.

Sentinel Software
☎ 081 876 7032
Suppliers of selected STS titles and a few original products. They don't arf churn 'em out.

Siren Software
☎ 061 724 7572
It'd take a hell of a time to list everything they do – check out their ad (it's the yellow half-page one).

STS ☎ 0446 722599
This lot deal with S/DOS, *The Dizzy Utility, Disc Imager, Disc Archiver.*

VerySoft
✉ 450 Roughman Road, Wingfield Estate, Rotherham, South Yorkshire.
The people who brought you *The Gripper* and *Comparitor*. They're also on the look out for new programmers.

The Big Softies

So you can ring them up and hassle 'em about releasing some new stuff.

Alternative Software
☎ 0977 797777

CodeMasters ☎ 0926 814132

Gremlin/GBH ☎ 0742 753423

Ocean/Hit Squad
☎ 061 832 6633

Titus/Fox Hits ☎ 071 700 2119

Touchdown ☎ 0268 541126

Virgin ☎ 081 960 2255

US Gold/Kixx ☎ 021 356 3388
Ask 'em where *Street Fighter 2* has got to, while you're at it.

Zeppelin Software
☎ 091 385 7755

Hardware

Datel ☎ 0782 744707
The place to go for mice, printers, memory expansions, all that sort of stuff.

Microform ☎ 0772 703131
Drives, upgrades, disks, all sorts of techy stuff like that.

Romantic Robot
☎ 081 200 8870
Creators of the Multiface, one of the most useful peripherals you'll find for the CPC – there's a complete list of multiface cheats in *AA90*.

WAVE ☎ 0229 829109
Suppliers of loadsa good stuff – their ad is on the back cover.

Software suppliers

OJ Software ☎ 0257 421915
Fast friendly service, the ad says. And it's right. They've got an impressively wide variety of software on offer as well.

Software Cavern ☎ 0628 891101
Probably the largest selection of CPC software for sale in the known universe.

Software Express
☎ 0463 240168
A new company in Inverness.

Mail Order

Trading Post ☎ 0952 462135
They're offering loads of cut-price cartridges at the moment.

Trojan ☎ 0554 777993
The people to speak to for cartridge and lightgun stuff.

Wizard Games ☎ 0446 722599
Games, games and yet more games, basically on every imaginable format.

Upgrades and Repairs

Avatar
☎ 0442 251705

Quantum ☎ 0446 722599
These guys'll do anything. Well, within reason, of course.

WTS Electronics
☎ 0582 491949
Amstrad-authorised repairs specialists.

The 103 guarantee

You'll be able to find this month's Shop Save coupon on page 55.

MAG*SAVE

CPsCene

The page of the magazine you (will) write

Everybody will be famous for 15 minutes, said Andy Warhol back in the 60s. Personally, I reckon that was just wishful thinking on his part the first time he had the misfortune to see Burt Reynolds in a film. But he had a point, you know – in this age of modern communications and the shrinking world everyone has the opportunity to get their voices heard by the masses.

And that's the opportunity we're giving you in this new section of the mag. Starting next month we're going to give over a page of the mag to you lot, so that you can have your say about anything you like on the CPC scene. You can write game reviews or hardware reviews or have a rant about something that gets your goat.

Get in print

And getting your literary masterworks published is as easy as falling off a piece of pie-shaped log. All you have to do is follow the instructions below, take heed of the advice in the accompanying box-out and then send off your stuff to us here at:

Amscene,
Amstrad Action,
Future Publishing,
30 Monmouth Street,
Bath, Avon BA1 2BW.

And here are a couple of rules:

- Keep your articles to 250 words at most.
- Make sure your writing is clear. Type or use a printer preferably. If we can't read your stuff then we can't print it, can we?

We can't promise to print everything we get sent, but you'll have a better chance of getting *your stuff in print if you take heed of the tips we give you here.* Good luck.



Tips time

DO keep to the word count.
DON'T copy old articles.
DO bear in mind prices and publishers/manufacturers if you're writing a review.
DON'T write like you would for an English essay – journalism is much punchier and less dry in style.
DO send us any relevant pictures if you can (though we will do software screen shots).
DON'T indulge in personal attacks on any one.
DO have fun – experiment as much as you want. The more original your piece the more chance it has of being published.
DON'T expect to get paid. This is a fanzine page (well, that's our excuse).

S.O.S

Save Our Street Fighter

The Street Fighter 2 Support Club

Dear US Gold,
I am the proud owner of a rather splendid Amstrad CPC and I would be willing to pay up to £☐☐ to see *Street Fighter 2* released for my machine. So hurry up and get it finished.

Yours fed-up-waitingly,

(Sign your name here)

It must not be allowed to happen. We can't let *Street Fighter 2* on the Amstrad become an event like Manchester for the 2000 Olympics, Elvis' tour of Britain, The Sex Pistols' *God Save The Queen* getting to number one, Mr Blobby getting a puncture, Sky causing a revolution in UK TV watching habits – things that should have happened but never did.

According to US Gold, the reason the game hasn't been released on the CPC is because there isn't a demand for it. Hah! Bilgewater! Poppycock! Balderdash! *Noel's House Party!* And other printable expletives. *Amstrad Action* has got over 20,000 readers who'll say otherwise (that's what we reckon, anyway).

But they have said that if they receive proof of that there is sufficient demand to make finishing the game worthwhile, they will reconsider their decision. Right, well let's prove it to them, then.

All you have to do is sign the coupon opposite, fill in the bit which says how much you would be prepared to pay for the game and send the whole lot off to US Gold at the following address:

Marketing Department,
US GOLD,
Units 2-3
Holford Way
Holford
Birmingham B6 7AX

Hopefully, US Gold will be snowed under with these coupons and will finally see some sense.

NOW A TOTAL MOUSE/ GRAPHICS PACKAGE FOR YOUR AMSTRAD AT A TRULY UNBEATABLE PRICE!!





Genius Mouse

COMPLETE WITH OCP ADVANCED ART STUDIO

SPECIAL OFFER PACK!!

- **Genius Mouse is a high resolution two button mouse featuring optical counting, teflon guides, microswitches, rubber coated ball and high quality interface.**
- **When combined with OCP Advanced Art Studio this graphics package is quite simply the best system available. The features are unmatched...**
- Create an image - shrink it, expand it, move it, rotate it, copy it, colour it, etc., etc.
- Spray patterns or shades, make elastic lines - stretch and manipulate shapes.
- Zoom in to add detail in fine mode. • Full cut and paste facilities plus excellent printer support.
- Pulldown/Icon driven menus for ease of use. • Mouse operation, plus joystick and keyboard control.
- 16 pens, 8 sprays, 16 brushes - so flexible anyone can create superb graphics easily.

TAPE OR DISK FOR 464 OR 6128 (PLEASE STATE WHICH REQUIRED) N.B. 464 NEEDS DK'TRONICS 64K RAM PACK

COMPLETE WITH MOUSE INTERFACE



- The Genius Mouse Graphics System comes complete with the special Mouse Interface to allow super smooth control.
- Attractively styled to match your 464 or 6128 design and colour. Simply plugs into Expansion/Joystick port.

ONLY £49.99

TOTAL PACKAGE INCLUDES GENIUS MOUSE, INTERFACE, OCP ADVANCED ART STUDIO PLUS FREE MOUSE MAT AND HOLDER

FREE! MOUSE MAT AND MOUSE HOLDER (WORTH £12.99) WITH EACH PACKAGE

NEW LC 200 COLOUR PRINTER PACKAGE



NOW YOU CAN PRINT OUT YOUR PICTURES IN FULL COLOUR!

- The Star LC200 Colour Printer not only prints in Near Letter Quality for your regular jobs but also prints out your pictures from Art Studio, etc., in genuine colour!
- LC200 is a full Centronics printer so it works with other computers (Amiga, ST, etc.).
- Made possible by Datel's unique colour printer driver - now you can have a hardcopy in up to 16 colours!! • No more to buy - just plug in and print!!

PACKAGE INCLUDES... STAR LC200 COLOUR PRINTER RRP £299.00
CENTRONICS PRINTER LEAD RRP £9.99
DATEL COLOUR PRINTER DRIVER SOFTWARE RRP £19.99
NORMALLY £327.98

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COLOUR PRINTER DRIVER AVAILABLE SEPARATELY ONLY £19.99

- If you already have an LC10 or LC 200 Colour Printer we can supply the Driver separately.

dktronics 64K MEMORY EXPANSION



- Simple plug in memory expansion gives instant extra memory.
- Features bank switching software for easy use by the programmer or for use as a data storage area.
- Ideal for use with the CPM 2.2 etc.
- The software also features some extra BASIC commands.
- 64K unit expands 464 to 128K.
- 64K unit brings 464 up to CPC 6128 memory configuration making a much larger software base available. Will work straight off with many programs designed for this unit (including OCP Art Studio - see Ad.).
- Bank switching done automatically by software (cassette 464).

ONLY £49.99 64K FOR 464

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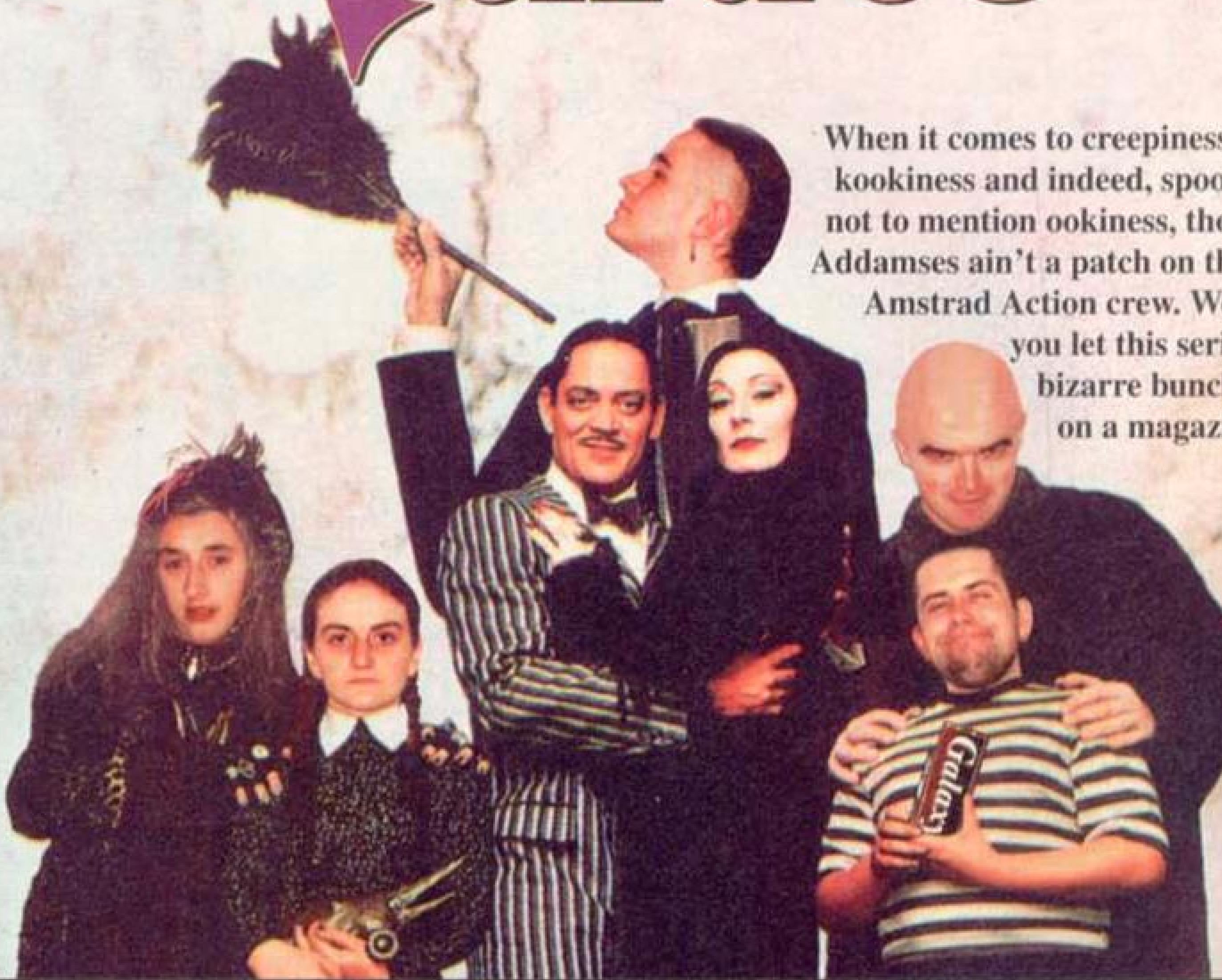
DATEL LONDON SHOP



222, TOTTENHAM COURT RD, LONDON, W1. TEL:071 5806460

Amstrad Family Values

When it comes to creepiness, kookiness and indeed, spookiness not to mention ookiness, those Addamses ain't a patch on the Amstrad Action crew. Would you let this seriously bizarre bunch loose on a magazine?



THE RETURN OF THE LIVING DEAD

Dave Golder – Eerie Editor
Cast as: Pugsley (typecasting)
Fave Comedy Film: Life of Brian
Family he'd most like to be a member of: The Bundys.
Most evil thing he's ever done: Replaced all the sugar with salt at one breakfast time at college.
Should *Reservoir Dogs* be released on video? Yes. I mean, come on, let's be honest - what's more likely to corrupt the youth of the nation - *Reservoir Dogs* or Mr Blobby?

Andy Ounsted – Arcane Art Editor
Cast as: Fester 'cos I look like him when I don't get enough sleep.
Fave Comedy Film: *Dead Men Don't Wear Plaid*
Family he'd most like to be a member of: *The Munsters* (the original series, not the awful new one), because I'd love to live in a house like that… come to think of it, as a student, I did!
Most evil thing he's ever done: Shutting our family cat (Murky Willow – honest!) in a cupboard, then getting her out, apologising, calming her down, then shoving her back in again.
Should *Reservoir Dogs* be released on video? Yes, because I keep on missing it and if I saw the torture scene in a cinema I'd probably throw up.

Simon Forrester – 'Orrible 'Airy
Cast as: Lurch, because I make visitors to the *Amstrad Action* office feel about as welcome.
Fave Comedy Film: *Evil Dead 3*
Family he'd most like to be a member of: The Royal Family, because I wouldn't mind taking part in the biggest rip-off ever – the civil list. I'd also like a bigger bedroom.
Most evil thing he's ever done: (Censored – on the grounds of common decency and sanity).
Should *Reservoir Dogs* be released on video? Yes – in a special limited edition moulded plastic 'Splattered Entrails' gift pack.

Clur Hodgson – Weirdo Writer
Cast as: Wednesday because there's nothing that I love to do more than torturing my little brother.
Fave Comedy Film: *The Road Runner Movie* (meep meep).
Family she'd most like to be a member of: The Ingalls from *Little House On the Prairie*
Most evil thing she's ever done: Accidentally gassing a budgie.
Should *Reservoir Dogs* be released on video? All censorship is wrong. Let the people decide (and if they're too young, let their parents decide). Little bit of politics. My name is Clur Hodgson. Thank you. Good night.

Mary Richards – Home Help
Cast as: Granny
Why? No-one else wanted to be the ugly old bag.
Fave Comedy Film: I'm still waiting for *Supergran The Movie*
Family she'd most like to be a member of? The Waughs - just 'cos they're so weird.
Most evil thing she's ever done. Sabotaged AA (*eh? – Ed*).
Should *Reservoir Dogs* be released on video? All dogs should be released into reservoirs. What's a video?

BTL

The Official Distribution Company for STS & Quantum Products
298 Holton Road, Barry, South Glamorgan Phone/Fax: 0446 722599

SOFT-LOK V2.3

£14.99 The ultimate speedlock tape-to-disk utility. Will transfer 99% of all single-load speedlock protected games automatically to disk. All CPCs with 128K and a disk drive.

DISK IMAGER PRO

£10.00 An amazing utility developed with the PARADOS or S-DOS owner in mind. Disk Imager Pro will allow you to store often unused 3" disks onto a high capacity 3.5" disk. All CPCs with a 3.5" disk drive and S-DOS or PARADOS.

SOUND HAKKER PRO

£10.00 Are you a failed musician? Then why not use this powerful hacking utility to extract the hundreds of pieces of music that appear in many demos and games. All CPCs and Plus's.
Free musical disk loader with every copy sold !!!

HARDWARE

INTERNAL REPLACEMENT 3" DISK DRIVE - £40

INTERNAL MODIFICATIONS TO YOUR CPC OR PLUS:

- 6128+ TAPE UPGRADE! £20 FITTED
- 464+ INTERNAL 128K UPGRADE £20 FITTED
- DISK DRIVE REPAIRS £20 INC
- 464+ DISK INTERFACE (INTERNAL) £35 FITTED
- MACHINE REPAIRS £20 INC

PARADOS - £20

PARADOS is the new ROM-based disk operating system for the Amstrad CPC range, and the Plus machines. It has a number of features which set it apart from its competitors, and make it the most powerful system to use with your external disk drives. Some of the main features of the PARADOS disk system are:

- Full compatibility with all ROMDOS formats, (ie D1, D2, D10, D20, D40 and D80 formats).
- Supports a number of other formats, including DATA, SYSTEM and IBM 40/80 track, single or double sided formats, MS800, S-DOS, ULTRA-FORM and 400K/S.
- New PARADOS formats including a 203K format for standard 3" disk drives or other 40 track drives.
- Allows ALL formats to be automatically detected on either drive A or drive B.
- Completely compatible with 6128 and 464 Plus machines.
- Uses NO excess user memory, and takes over the workspace of the standard AMSDOS ROM if installed in a lower slot.
- Can replace the AMSDOS disk ROM for greater compatibility. Phone for details - FREE FITTING.
- Contains an extremely powerful utility program for the formatting, copying, erasing etc of disks and files.

The utility program supplied with PARADOS can be used with any of the formats supported by PARADOS, and will take advantage of any extra RAM memory available as a copying buffer. Some of the functions performed by the utility program are:

- Fast disk formatting, with the option of verifying while formatting.
- Backing up of disks with any of the formats supported.
- Verifying of disks of any format supported.
- Erasing of single files or multiple files, with queries if files are read-only.
- Setting of single files or multiple files to read/write, read only, directory (visible) or system (hidden).
- Moving of single or multiple files between user numbers.

PARADOS can perform functions which were previously either nearly impossible, or required the use of a number of separate utility programs. For example, which other copying program allows you to copy files directly from either side of an MS800 format disk to a ROMDOS D10 format disk in the same drive?

PARADOS is available exclusively from Quantum Computing for £24.95, or a special trade-up price (for current users of other ROM based disk systems (eg ROMDOS)) of £19.95 if you send in your old ROM.

XEXOR V2.6 - £15

XEXOR is the most comprehensive disk utility package available for the Amstrad CPC and Plus range of computers. It gives the user the choice of either a command line or menu driven interface, allowing the user to easily perform the functions which they require with disks, such as formatting, backing up, sector editing etc. in one comprehensive package. Some of the main features of XEXOR are:

- Fast formatting with optional verify, and the added ability to define your own special formats.
- Full directory editing facilities allowing files to be erased, unerased, set to read/write, read-only, directory or system, moved to other user areas, renamed etc.
- Full sector editing of any type of sector, with the fastest screen update of any sector editor.
- A multi-file copier with optional verify facility, making it one of the most reliable copiers available.
- An extremely fast file header reader to give detailed information for each file on a disk.
- **Powerful BACKUP command with the ability to copy most protected software, including programs with 6K sectors such as the Hexagon protection system or newer versions of Speedlock.**
- Loading of files to a range of sectors, or saving of a range of sectors to a file. (Useful for recovering data or for creating your own protection systems.)
- File mapping facility to show which sectors on a disk each file occupies and file trace facility to allow files to be followed on the disk.
- Search a disk for the occurrence of an ASCII string or a hexadecimal sequence of bytes.
- Fully compatible with PARADOS, allowing the use of 80 track and/or double sided disk drives.
- Full on-line help facility with help on specific subjects directly from the command line (eg HELP COMMAND FORMAT)

All XEXOR commands take advantage of any memory expansions available, giving large buffer sizes for copying, hence less swapping of disks when the source and destination drive is the same.

Reviewed in Amstrad Action (No. 96, Sep '93), and soon to be reviewed in CPC User and WACCI. AA quoted "...never before have I seen a piece of work that's so comprehensive." and "This HAS to be the ultimate disk utility. It's definitely the best we've seen." from CPC Attack (Nov '92, regarding Version 2.5).

If there's one disk utility you NEED to have, it's XEXOR.

---

multiface. THE FINAL CLEARANCE!

When the **MULTIFACE** was launched in 1986, it was an outright winner. No one has ever come up with such a powerful, useful add-on. Labeled *the ESSENTIAL* ***CPC COMPANION***, this **MULTI**purpose inter**FACE** proved to be an absolute Godsend for the Amstrad CPC users. Remember the first disk drive on the CPC 464? Suddenly the loading took seconds rather than minutes from tapes. Except that there was not much to load - very little had originally been released on disks and there was no facility to transfer programs from tapes to disks.

THE SAVIOUR

This is one area where the **MULTIFACE** saved everything - literally. The black magic box could stop anything any time and **SAVE** it to disk or tape. When the 6128 came with a built-in drive, it was left again to the **MULTIFACE** to do all the transferring - and to perform other miracles... So, in case you just came from Mars, what does a **MULTIFACE** do? First, it sits at the back of your CPC, its magic button always ready. Press it, and the **MULTIFACE** takes control!

ACTION!

Once in action, it freezes everything and it displays its own menu. Being fully menu-driven and error-trapped, you'll probably never need the full manual that comes with the MULTIFACE. Most operations are also entirely **AUTOMATIC**, so to *SAVE* a game once you stopped it, you just *name* it, insert *disk/tape*, and press a key. You can then *return* and *continue* the program. If you get beaten later on, just reload from where you saved last and play just from there again! No need to go back to the start all the time. Or even better, the **Multiface** allows you to **POKE**

INFINITE LIVES

listed in this magazine and you'll *never* loose. The MULTIFACE comes with a built-in **TOOLKIT** that lets you inspect/alter/dump the CPC RAM. It also has its own 8K RAM and 8K ROM. Many top programs were written with the aid of the TOOLKIT and the extra 8K RAM. And do you like the **screen shots** in this magazine? They are all produced using the **MULTIFACE!**

When we announced earlier that we were to pull out of the 8-bit market, the surge of interest in the **MULTIFACE** was such, that we had to make many more. And not just the MULTIFACE - we also have the one and only disassembler,

THE INSIDER

that lets you ***see*** and ***alter*** what happens any time anywhere inside a ***RUNNING*** CPC program. It comes on a **disk** and loads inside a MULTIFACE. Press the magic button and the **INSIDER** will disassemble, find text/code, dump the CPC RAM to printer, etc. Get it at **HALF-PRICE** for **£7.95**!

LAST CHANCE!

As this goes to press, we still have enough stock of both the **MULTIFACE** and **INSIDER**. This, however, is our ***final clearance*** and once these are sold, we will NOT make any more. The **MULTIFACE** is terrific value, in fact more for the *customer* than for the *manufacturer*... We will only accept orders when we can supply the goods and we give a *full guarantee*. Plus we still offer up to **£10 OFF! mail orders!**

You MUST NOT use our products to copy, reproduce or infringe in any way whatsoever any copyright material without the permission of the copyright owner. We do neither condone nor authorise the use of our products for the reproduction of copyright material - to do so is ILLEGAL!

All prices are already discounted and apply to Mail Orders to 5.4.1994 only.

I order a **MULTIFACE 2** for **CPC 464/6128** ☐ ~~£47.95~~ **£39.95** or for **CPC+** ☐ ~~£49.95~~ **£39.95**
RODOS ☐ ~~£29.95~~ **£14.95** **BLANK DISKS** ☐ ~~£3.95~~ **£2.95** **INSIDER** ☐ ~~£14.95~~ **£7.95**
PLUS P&P: UK and Europe **£2** Overseas **£3**.
I enclose a **cheque/PO/cash** for £............ or debit my **Access/Visa** No. ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐ Card Exp............
Name/address..

ROMANTIC ROBOT, 54 Deanscroft Ave, London NW9 8EN ☎ 24 hrs 081-200 8870 ☎ AA

SONIC BOOM



It's the feature we dared not to call, 'Make Some Noise'. Simon 'Iron ears' Forrester slips on his headphones, turns the amp up to 11 and demonstrates the diversity of the CPC's sonic skills.

Are your animations a little dull? It's all very well having thousands of impressively animated objects flying around, but when something hits the floor, there should be a thud, and when something blows up into a thousand tiny pieces, a big beefy bang enhances the effect. This month, then, we're going to take a look at the world of sound, and find out just how much of it we can get coming out of the back of your CPC. But where to start?

What is sound?

You maybe thinking, "Well, it's just noise, isn't it?" But things go a little deeper than that. Let's start with something really simple – try typing this in:

```
PRINT CHR$(7)
```

Haylp!

I can guess the reaction – I got a subtle clue from the screams of terror coming from 20,000 non-musical *Amstrad Action* readers all banging on the doors of newsagents up and down the country, screaming to be let out – but don't worry. At no point in this feature will I be assuming you know anything about writing music. Granted, at some point I'll be running through the basics (really technical things like notes), but if Dave can follow it (I could do five pages of drummer jokes alone), I'm sure you'll all be pretty safe.

If you want to slide into the world of computer music a little more gently, you can always try digging out issue 93, and running *BooTracker* from the covertape – it'll let you write simple sequences of notes without being distracted by the programming angle, just as this feature will hopefully do exactly the opposite; letting you concentrate on the mechanics of CPC noise without bothering with the musical side of things too much.

If all went well (if you managed to mess that up, get a new hobby), you should have heard a beep. That beep is probably the most simple sound your CPC can make as far as you're concerned; it's the CPC's alert sound, and you'll hear it every time you try and delete something that isn't there (try just pressing DELETE when there's nothing to rub out), and every time you try to type too much on one logical line (hold down SPACE for about 12 seconds).

That sound was more than just a beep, though, it was a collection of little clicks. If you think that's weird, bear in mind that this is how all electronic sound is produced; a speaker works by vibrating at an incredibly high frequency (if you're not all that technically minded – or you're Dave – that just means it wobbles really quickly) which vibrates the air at the same frequency, creating sound waves that your ears will sense.

Now we know we're just dealing with a series of clicks, understanding how the CPC generates sound gets a little simpler. In a little while, we'll look at how BASIC (and much later on, firmware) lets you use the CPC's speaker, but before that, there's another question that needs to be asked:

What are we going to do?

I suppose answering that might be useful. In this feature, we're going to take a look at two main uses of sound on the CPC:

- Sound effects – That's right, the bangs, whooshes, kersplangs and any other onomatopoeic (a word which is virtually a sound effect in itself) words you care to mention. If you play any computer game (unless it's an incredibly bad one), you'll be constantly bombarded with noise – everything you do creates sound, and it'll be these sounds that we'll be producing without the aid of a safety net.

When it comes to the crunch

You'll find the word 'distortion' liberally thrown around the main feature, and you may not have understand what it means. Listen to any single in the charts featuring, say, a guitar. You'll notice that as opposed to a spangly, stringy noise, the guitar parts produce the sound traditionally associated with electric guitars – a crunchy, distorted sound. If you don't believe me, find a guitarist and ask them to play a tune without an amplifier (failing that, you can clearly hear the difference between the two guitar sounds on Nirvana's *Smells Like Teen Spirit*). Anyway, the main effect involved in producing that crunchy sound is called distortion. So now you know.



Eric Clapton plus distortion equals something a bit like this...

- Music – In many ways, the edges of these two categories are blurred; if you want the music to sound any good, you'll have to create noises that resemble different instruments, and at the end of the day, they're just sound effects being played at different pitches (notes) in a certain sequence and at a certain speed. Once you've got the band together, though, you'll be looking at how to get them all to play the same tune, and start and stop at the same time.

Manual labour

If you want to create some truly interesting sounds, though, you're going to have to create something slightly better than a simple beep. I could give you full details of BASIC's SOUND

High notes

Nothing adds that final touch of gloss to a computer game quite like music does. During the past 101 issues of this glorious mag of ours, we've seen (or rather heard) some examples of truly excellent CPC sounds:

Prehistorik 2 – What issue of *Amstrad Action* would be complete without the obligatory *Prehistorik 2* mention? Plus owners will agree, though, that the title screen music to this 96 per center has to be one of the best examples of music ever on the CPC.



It's another issue of *Amstrad Action*, and so yet another stunning grab of *Prehistorik 2*. The music's good too.

Cybernoid 1&2: Don't just take my word for it – load it up yourself (the second game's on this month's covertape, you see) and witness sound effects (and indeed music) that, though they may sound a little tinny through the speakers of the older CPC range (can I start calling them the minuses?), are wonderfully atmospheric, and complement the weird feel of the game beautifully.



As well as being really cool to listen to, *Cybernoid* is really incredibly difficult.

The Blues Brothers: Well, would you credit it? It's another covertape game (not that we're biased or anything). Though the 12-bar blues theme tune does tend to grate on your nerves slightly after the four hundred and fifty-second rendition, there's no denying that this CPC version has been excellently adapted.



Everybody needs to hear the excellent version of Everybody Needs Somebody from the CPC Blues Brothers.

command along with the ENVelope system here, but if you've got a CPC, you've got a manual, and if you've got a manual, all the information you'll need can be found in chapters three, seven and nine.

Chapter three contains a complete list of all BASIC commands, so you'll need to take a look at SOUND, ENT, ENV and RELEASE. Chapter seven is the reference section and straight after the character set and keyboard layout you'll find a table containing notes and their corresponding values for use with the SOUND command. Chapter nine will probably be the most use to you, though, as it contains a slightly more detailed guide to the CPC SOUND system, explaining all the bits that would have taken up too much space here.

So, thanks to the manual, we can get straight down to work, without having to sit through an incredibly boring and lengthy explanation.

The SOUND commands

Fear not – we're starting with BASIC, and staying there for the majority of this feature. BASIC's sound system is very simple to understand, and starts with a command called, funnily enough, SOUND. To create noise, the sound command looks very much like this:

```
SOUND chn,per,dur,vol,env,ent,noi
```

Wherever you see three lower-case letters, you should either be entering a value, or nothing at all, going on to the next comma, and the next parameter. Please note that you only have to enter the first two parameters, chn and per, to create a sound – the rest you can use if you want to, or miss off altogether.

chn – The first value you must give is the channel number. It's probably easy to think of each channel as a speaker, and that your CPC has three of them; you can play three sounds at the same time, or send any sound to any number of channels you want. The value is calculated with a binary system that's fairly simple to understand, with channels A, B, and C represented by the value 1, 2 and 4 respectively.

If you wanted your sound to play on channel C, then, the number would be 4. If you wanted your sound to play on channels A and C together, though, you'd add the values 1 and 4 together, and use the number 5.

per – You'd think, having a full name like 'tone period', that this value was the length of the sound, but it isn't. Instead, it's the pitch, or note, of the sound. If you want a specific note as opposed to an approximate pitch, you'd be wise to take a look at the table at the bottom of the opposite page. If you're not creating music, and just want any old pitch, experiment a little.

dur – The duration of the note is measured in hundredths of a second, though if you leave the parameter blank, the standard is 20.

vol – The volume of the sound works on a range of 0 to 15, in whole numbers only. What more do you need to know, apart from the fact that when you're using a volume envelope, this value will determine the starting volume on the wave.

env – Well, who would have guessed? It's the volume envelope, explained fully later.

ent – And the tone envelope as well.

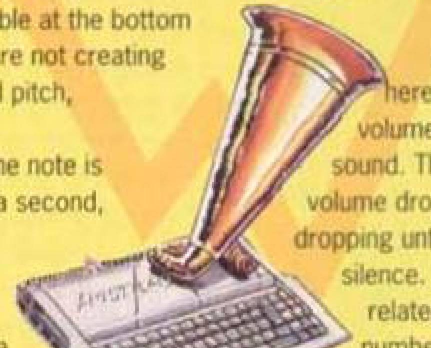
noi – This is the noise factor, again from 0 to 15. It basically adds white noise to the sound, which can act as distortion if used properly (take a look at the box-out on distortion).

Volume envelopes

There are two very important parameters passed with the sound command – the volume and tone envelopes. These are what turns a normal, flat and very boring note into something a little more tolerable. Let's take a look at a very simple volume envelope:



It's a decreasing sound wave – and everybody wants a piece of the caption (poor, very poor – Dave).



As you can see, what we've got here is a pattern describing how the volume will act throughout the length of the sound. This particular envelope will make the volume drop away immediately, and keep dropping until it hits zero, and then there's silence. As with most things computer related, this wave is described by numbers. As this is a relatively simple little pattern, only six numbers are used:

Cacophony

It's all very well sitting around talking about the best CPC music ever (see the box entitled "High Notes"), but there really have been some truly duff, and almost flatulent (can I say that on live paper?) squawks of accompaniments in our time:

Rik The Roadie – I know it was on the tape and we're all supposed to be patriotic and everything, but comparing *Rik* and *The Blues Brothers* (both of which had 12-bar blues tunes) really does reveal a few things. Sorry, that's a lie – all it does is re-enforce something that's ball-crunchingly apparent from the start, being that *Rik's* theme tune has to be one of the most nauseating, grating, and altogether loathsome pieces of game music in existence.

Super Robin Hood – For a flick-screen platformer (and before anyone says anything, it's nothing like *Dizzy*), *RSH* was really quite good, and the music that went along with it wasn't that bad either. The only problem was that the Codies (bless 'em) attempted to incorporate speech into the game, making Maid Marion shout things like, "Help me, Robin!" The only problem was that the quality of the speech would randomly range from appalling to vaguely intelligible (on the same sample) to extent that the dialogue itself was displayed in a little box at the same time, effectively ruining the point altogether.

Step	Size	Time
1	15	1
15	-1	1

There are two sections in the pattern. The first takes the volume right up to full in no time at all, as there is one step, 15 volume counts high, happening in one hundredth of a second. The second section deals with the decrease in volume, and as the diagram shows, there are 15 steps, each –1 volume count in size (they decrease the volume as opposed to increasing it), each step being one hundredth of a second long. Let's set this up on a CPC, then.

Before you start, take a look at the command you're going to use:

```
ENV·num,stp,siz,tim,stp,siz,tim...
```

It's all very simple. The first parameter states which of BASIC's envelopes you'll be defining (you can use up to 15), and then you just stack your envelope parameters on afterwards. You can use up to five different envelope sections, though when using the command, you can enter just the amount you need to and stop if you want. Anyway:

```
ENV·1,1,15,1,15,-1,1
```

Now you can get that to play by using the SOUND command:

```
SOUND·1,638,0,0,1
```

What you should have noticed is that no note duration was given (it was zero), as this will tell the CPC to play the note for as long as the envelope lasts. For now, that's all you'll need to know about volume envelopes.

Tone envelopes

If you managed to get to grips with volume envelopes, tone envelopes shouldn't pose too much of a problem – they're virtually the same. Let's try one out:

Step	Size	Time
20	-44	1
10	88	1

The BASIC version looks like this:

```
ENT·1,20,-44,1,10,88,1
SOUND·1,1517,0,15,0,1
```

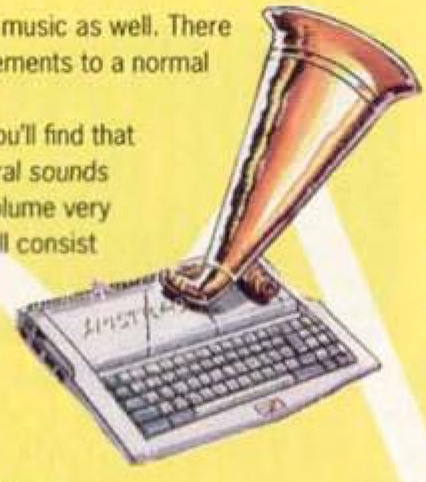
The only problem you'll experience is that the note plays for a lot longer than the tone envelope (can I call them antelopes from now on?). You could remedy this in two ways; either couple the antelope with an envelope (volume), that lasts for the correct amount of time. Failing that, you could calculate how many hundredths of a second your tone envelope lasts for, and state that figure as the duration for the sound command. All you have to do is multiply the number of steps by the time per step in each section, and add the results together. 20x1+10x1 is quite obviously 30.

```
SOUND·1,1517,30,15,0,1
```

Fun, huh? Oh, by the way, you've now seen all you need to see for the time being – if you haven't worked this stuff out by now, you should pick it up again on the way.

Effects

Before you create any new tunes, you'll need some sound effects to play them with. These sound effects can be anything from a plop to a splang; you'll need instruments for when you come to write music as well. There are various elements to a normal sound effect:



- Volume – You'll find that *nearly all natural sounds* decrease in volume very quickly; they all consist of a hit (or very fast attack), and a fairly rapid decay, with virtually no sustain whatsoever.

Musical instruments, as we've already seen, work in a different way, with the standard attack, sustain and decay sections to the volume wave (drums work as sound effects instead of musical instruments, which says quite a lot if you ask me).

- Tone – Oddly enough, most sound effects don't exactly go through many pitch changes. If you're trying to portray fluids, pitch changes are usually a 'Good Thing', but most other sounds stay at the same note.

If you're writing music, you'll obviously only want one pitch, because an instrument that changes note halfway through the sound is going to sound very odd indeed, and you'll have a hell of a time getting it to work with your tune.

- Distortion – White noise (that's what those in the know call it) is always handy for sound effects. In fact, it can turn just about anything into a sound effect – try it at the different levels (0 to 15), and you'll see what I mean.

Please bear in mind, though, that you'll never get a completely accurate mimicry of any sound – the trick to good sound effects and music is to suggest a sound, rather than imitate it. If you try to mimic the sound exactly, it'll sound abysmal, and you'll come off looking like a complete tonka. Without further ado, then, let's run through a couple. All of the starting volumes will be fifteen. Anyway:

Name	Pitch	Noise	Envelope
Bass Drum	1517	15	15,-1,2
Rim Shot	0638	01	1,0,1
Scrape	1517	05	15,-1,1
			15,1,1
Cymbal	0190	15	15,-1,20
Snare	3034	01	16,1,2
			15,-1,1
Short chime			16,1,1
			15,-1,2
Longer chime			16,1,1
			15,-1,8
Echo			8,7,10
Stutter			8,-7,5
Plop	0638		20,-100,1*

(*This one is an antelope.)

Play around

A little experimentation should provide you with a whole range of different noises and types of noise, so fiddle to your heart's content. For an easier-to-use envelope editor (with a built in mini keyboard type thing), dig out your copy of *BooTracker* *(AA92)*, and have a play. If you ask me, though, we ought to think about some tunes...

Making beautiful music

Okay then, it's time to write some music. We're going to do this in BASIC first so everyone can follow it (and actually use it in their own programs), but the principles can all be used easily from machine code as well. We'll start with a collection of notes, adapted (well, ripped off) from a song called *Sanitarium*. Here's the very simple version of the tune:

Even lyrics?

The more astute readers among you are bound to have noticed the mention of computer speech elsewhere in this feature, and probably want to give it a try. After all, if the CPC can generate other sounds in the form of waves, why can't it handle speech (which is exactly the same)? The simple answer is that it can. The reason I'm not going to show you how is simple as well; it'd take a five page feature on its own to go through phonetics, dictionaries, intonation, phrasing and everything else that goes alongside the spoken word. I'll see what I can do about persuading Clur to line up a speech digitiser for the covertape, so you may get lucky...

Tone Periods

Just a thought – you might not want to have to start flicking through your manual for tone periods to correspond to notes all the time, so here's a quick look-up table. To use it, just match up the octave and note you want, and you'll find the value you need.

Oct	-4	-3	-2	-1	0	1	2	3
C	&0EEE	&0777	&03BC	&01DE	&00EF	&0077	&003C	&001E
C#	&0E18	&070C	&0386	&01C3	&00E1	&0071	&0038	&001C
D	&0D4D	&06A7	&0353	&01AA	&00D5	&006A	&0035	&001B
D#	&0C8E	&0647	&0324	&0192	&00C9	&0064	&0032	&0019
E	&0BDA	&05ED	&02F6	&017B	&00BE	&005F	&002F	&0018
F	&0B2F	&0598	&02CC	&0166	&00B3	&0059	&002D	&0016
F#	&0A8F	&0547	&02A4	&0152	&00A9	&0054	&002A	&0015
G	&09F7	&04FC	&027E	&013F	&009F	&0050	&0028	&0014
G#	&0968	&04B4	&025A	&012D	&0096	&004B	&0026	&0013
A	&08E1	&0470	&0238	&011C	&008E	&0047	&0024	&0012
A#	&0861	&0431	&0218	&010C	&0086	&0043	&0022	&0011
B	&07E9	&03F4	&01FA	&00FD	&007F	&003F	&0020	&0010

Interrupts

Warning to anyone who wants to write sound or music that needs to run without interrupts – all of the firmware commands featured here will turn interrupts back on, so beware.

```
CAPE 10·READ·n$
EAIO 20·IF·n$="***"THEN·END
CAEP 30·n=VAL(n$)
CAIP 40·SOUND·1,n
CAPD 50·GOTO·10
FAKB 60·DATA·1517,1012,676,638
EAJP 70·DATA·1517,956,638,638
EAGP 80·DATA·1517,851,568,638
DAIO 90·DATA·902,602,451
EALC 100·DATA·956,638,478
DAJD 110·DATA·676,***
```

Sounds hideous, doesn't it? The reason it sounds so laughably bad is because the notes are being played as solid sound – they don't have an attack, sustain or decay. What we really need to add is a volume envelope, to make the notes a little more distinguishable from each other. The lines you'll need to add are:

```
EABC 5·ENV·1,3,5,1,10,-1,2
EANA 40·SOUND·1,n,0,0,1
```

Still sounds pretty bad, doesn't it? You know, I'm beginning to think this feature may not have been such a brilliant idea after all – surely you'd be better off buying a Yamaha keyboard or something? On second thoughts, you'd better not – your CPC is capable of producing some perfectly decent effects, and all we've got to do is show you how to get at them.

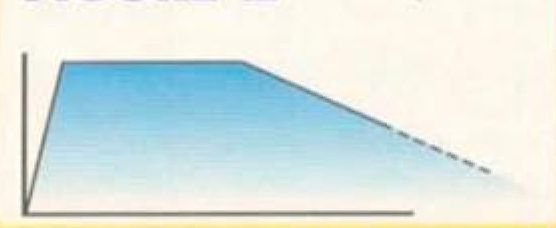
We'll start with a proper instrument, and a proper instrument's sound wave. This proper sound wave isn't the actual sound that any real instrument makes, it's just the sound we'd prefer to be producing. Let's take a look:

FIGURE 1

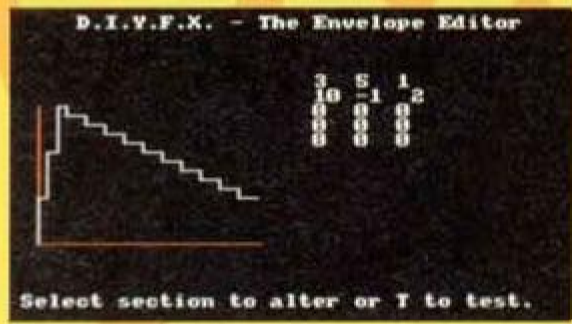


As you can see, this wave has three sections; attack, sustain and delay. Looking at the diagram might give a wrong impression of the sound, though; the attack isn't a gradual slide into the noise, it's a quick increase in volume right at the beginning of the note, that actually defines the volume. The sustain is the part of the note that we all hear, being the main part. The decay is just as it seems, as well – it's the note gradually fading away, before the next one comes in. In reality, this wave would probably look more like this:

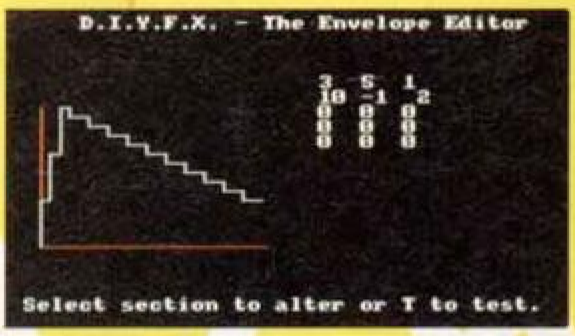
FIGURE 2



As the attack is too short and the decay too long, though, you would encounter problems when transposing this on to the CPC, so the sound wave is modified to produce a rougher approximation of the noise. The sound wave we created earlier looks like this:



Whereas the replacement wave looks like this:



So let's insert the new envelope into the old position in the program, with the line:

```
FAMG·5·ENV·1,5,3,1,1,0,10,15,-1,2
```

Run the program again. Whereas before it didn't sound any good because it was a badly designed instrument, now it sounds abysmal because there's no backing – I promise you.

This means we're going to add backing – well, you are. All you have to do is use what you've learnt so far, take a tune, and write a program that'll play a note on all three channels.

But I've got no idea what I'm doing...

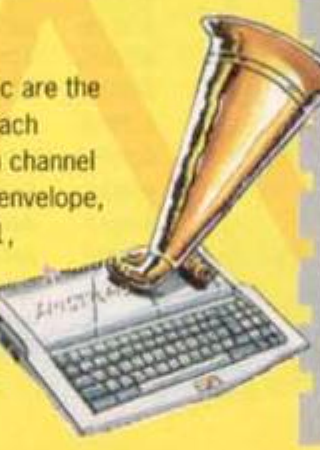
I wouldn't be that cruel. Here's a very simple BASIC tune driver:

```
FAIB 10·EVERY·25,3·GOSUB·60
DAPM 20·FOR·d=1·TO·100
CAGE 30·NEXT·d
GACG 40·IF·INKEY$=""THEN·GOTO·20
BAMF 50·END
DAMK 60·READ·a$,b$,c$
KAJG 70·IF·a$="END"THEN·PRINT·REMAIN(3):RETUR
N
IAHA 80·a=VAL(a$):b=VAL(b$):c=VAL(c$)
HAOC 90·IF·a<>0·THEN·SOUND·1,a,0,0,1
HAKF 100·IF·b<>0·THEN·SOUND·2,b,0,0,2
HAAG 110·IF·c<>0·THEN·SOUND·4,c,0,0,3
CACH 120·GOTO·60
```

After the routine, you should give the data for the tune, in the following format:

```
130·DATA·a,b,c
140·DATA·a,b,c
```

Where the a, b and c are the notes to be played on each particular channel. Each channel will use its own volume envelope, these being envelopes 1, 2 and 3 for channels a, b and c respectively. If you don't want a note to be



Software

Of course, you don't have to create everything yourself – you can buy packages to do all of that for you, so let's take a look at two packages still readily available that could seriously help your musical musings...

BooTracker

Ooh... What a wonderful little package this is, indeedy (*I wonder who could have written it, by chance? – Dave*). The package features three-channel sound, definable instruments and an envelope system that's compatible with BASIC, and just about everything else a musician could hope for. It was also given away on issue 92's covertape, so turn to Back Issues and don't whinge when you're asked to fork out a measly £2.95 (plus a quid for postage and packing).



It's amazing, it's wonderful, it's well written, beautiful, useful and Hairy's.

Soundtrakker

Unfortunately (for my ego), *Soundtrakker* is an excellent music utility too. Unlike *BooTracker*, this package deals with hardware envelopes, and so can create tunes that run without interrupts, a Godsend for demo writers.

You can get hold of a copy of this splendid disk-only package (Tim Norris gave it 93 per cent ten issues back) by sending your cheques or postal orders to Sentinel Software, 41 Enmore Gardens, East Sheen, London, SW14 8RF. The whole thing will cost you £24.99.



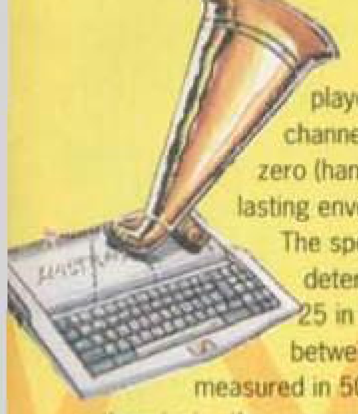
Soundtrakker, the one really good CPC music application left on the market.

● In case you're wondering, both packages work by listing notes (as opposed to constructing sheet music), and can compile machine code files to be run in your own programs, be they BASIC or machine code.

More than just

Okay, so running out and buying a room-full of MIDI gear will set you back quite a lot. In fact, you'll be working two jobs for the rest of your life trying to pay off the bill at the music shop. What to do?

If you contact Datel Electronics on 0782 744707, they'd be really quite happy to sell you a certain little black box called the RAM Music Machine. This little box is a lot more than simply a MIDI interface (though it does act as a MIDI controller when you want it to), as it includes a complete soundtracker, a drum kit



played on any particular channel, give the tone value zero (handy for giving longer lasting envelopes time to finish).

The speed of the tune is determined by the number 25 in line 10 – the delay between each note is measured in 50ths of a second, so at the minute, the program plays two notes per second. At the end of the tune, you should have:

```
DATA·END,END,END
```

This will tell the program to stop.

Machine code

Yep, it's that dreaded stuff again. There'll be a lot of people out there hoping I'm going to cover hardware sound (you know, the stuff that works with interrupts turned off), but for now I'll stick with the firmware versions of the sound commands, dealing with more complicated chippery in Assembly Line in the very near future.

In the meantime, here's my condensed version of the sound firmware, for all those who don't have a copy of *Soft 968, The Firmware Guide* (known here on in as *The Book Of The Dead*).

&BCA7 – Sound Reset
This call resets the sound chip, closing down all noise, and generally stopping everything, really. As there are no entry conditions, you could access this one from BASIC, with a quick **CALL·&BCA7.** AF, BC, DE, and HL all corrupt. It says here that all other registers are preserved but, apart from the index and alternative sets, what others are there?

&BCAA – Sound Queue
This is the direct equivalent of BASIC's SOUND command, as it adds a sound to the sound queue of one or more channels. If there's no space on the queue, carry will be false, and HL will be preserved. If there was space, everything corrupts except for the carry flag, which is true. Everything else corrupts.

On entry, HL must contain the address of the data block, which must lie in the central area of the first 64k of RAM (somewhere between &4000 and &bfff). The data block is laid out as follows:

Byte	Data
0	Channel
1	Volume envelope
2	Tone envelope (antelope)
3&4	Tone period (pitch)
5	Noise period
6	Initial volume
7&8	Duration

a MIDI interface

and an incredibly high quality sampler. The reason it can do all these wonderful things is because it doesn't rely on the CPC's own hardware – it's got lots of its own, built in. The incredibly easy-to-use software that you'll need to run the little black box comes on disk or tape, loads in a flash and converts your standard CPC into a total noise experience.

If I were to give RMM a rating it'd be around 85 per cent, I'd probably rate it at about 85 per cent – go out and buy one now (or tomorrow at the latest).

Where data shares two bytes, it's stored in the form of a word, which is written low byte first (this is standard anyway). Where duration is stated, if the value is zero the sound will last for the length of the volume envelope. If negative numbers are used (using the standard minus number representation), the envelope will be repeated that many times. Unfortunately, this means that the longest possible standard non-enveloped duration count is 32,768, but that's a good 327 seconds, so what's the problem?

&BCB3 – Sound Release
This command, as well as releasing all sounds held on channels from the start, automatically releases sounds bound by the Sound Hold command. On entry, the channel to be released must be held in A in standard bit form (the form that we've discussed more times than I can remember). Oh yeah, and AF, BC, DE, HL and IX all corrupt on exit.

&BCB6 – Sound Hold
This one simply holds every sound channel indefinitely, whether they're sounding off or not. There are no entry conditions, and no exit conditions that you'd ever really find any use for.

The data in each section is also arranged simply:

1	Number of steps
2	Step size
3	Step time

If the number of envelope sections is set to zero, the sound will be held for two seconds at a constant volume.

&BCBF – Sound Tone Envelope
Just as the previous address was the equivalent of ENV, this one is the direct equivalent of ENT, so we'll use this to define antelopes. It works in almost exactly the same way, as well.

Sounding off

So now, hopefully, you know all about writing music. With a bit of luck, you know how to get it on to your CPC as well. Instead of me just saying 'have fun' and letting you get on with it, though, I've decided to let you put what you've learnt to good use.

Albums are expensive, aren't they? That's why we're offering the album on CD of your choice – any album you wish (as long as it's currently available and not a collector's item), courtesy of *Amstrad Action*. All you have to do is write a piece of music on your CPC, using either

MIDI matters

Of course, you might not want to create any noise at all with your CPC's own speaker or sound system. Have you ever heard of MIDI? The whole thing can go to quite hideous technical detail, but for now all you need to know is that, using a standard known as MIDI, you can make electronic instruments talk to each other (as long as they're MIDI compatible), and do various bits and pieces, taking advantage of the fact that they're all linked to each other and a computer; this enables the computer to control or play the instruments and for the instruments to send data back to the computer to be recorded and edited. You could time each instrument to do various things at certain times, or control the whole lot from a computer.

It's a pity, then, that your CPC doesn't have a MIDI port. But if you're really into the whole thing you can get hold of MIDI interfaces, that'll let you take advantage of this musical revolution without going to the expense of a more powerful machine.

The only problem is that nowadays there aren't any MIDI interfaces for the CPC commercially available, but don't let that deter you – just keep an eye out for them in our Reader Ads section; you should pick one up for £30 or £40 quid, and from then on all you have to buy are instruments.

If you want to learn more about MIDI, what you can do with it, and what it can do for you, I recommend you buy yourself a copy of the excellent *Future Music* (one of AA's sister magazines) which is all about making music electronically. It's available in all good newsagents now (as the saying goes).

&BCB9 – Sound Continue
Here's the undo for the Sound Hold command. There are no entry conditions, though AF, BC, DE, and IX corrupt on exit.

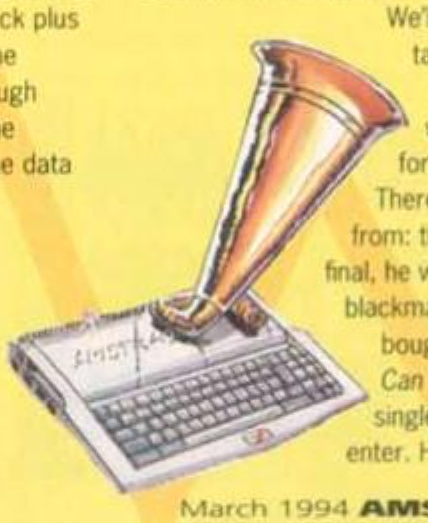
&BCBC – Sound Ampl Envelope
It's the firmware equivalent of the ENV command, and is just as easy to use. On entry, A contains the envelope number, and HL contains the data address. On exit, if the envelope was set up okay, the carry flag is true, HL contains the address of the data block plus 16, and both A and BC are corrupt. If the envelope was invalid, carry is false, though A, B and HL are preserved. Whatever the weather, DE and other flags corrupt. The data block has a simple layout:

Byte	Data
0	Number of sections
1-3	Section one
4-6	Section two
7-9	Section three
10-12	Section four
13-15	Section five

BASIC, machine code or a soundtracker package. The tune doesn't have to be original, either – cover versions of other songs will be quite acceptable. The closing date for this little competition is the 11th of March, so get writing, and send your entries along to:

I Can Write Music Better Than Hairy, Yes,
Amstrad Action,
Future Publishing,
30 Monmouth Street,
Bath, Avon BA1 2BW.

We'll accept entries on both tape and disk, and we might even put the winner on the covertape for the world to hear.



There are no rules, apart from: the editor's decision is final, he will not give in to blackmail and nobody who bought that dire *Things Can Only Get Better* single is allowed to enter. Have fun. AA

Basically BASIC

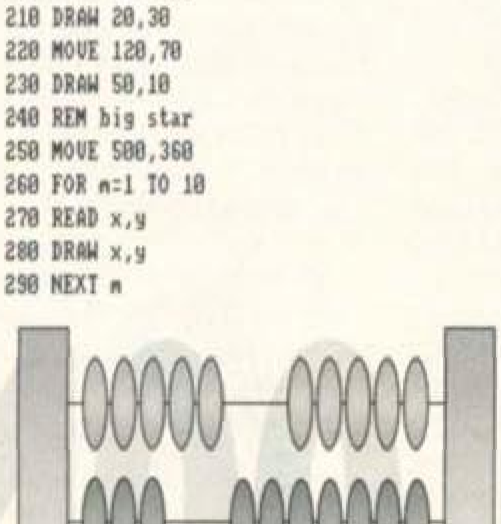


Stand aside Tony Hart. Roll over Rolf Harris. Clur Hodgson is here to show you how to be create artistic masterpieces in BASIC (or tacky drawings of spaceships, at least). Can you tell what it is yet?

Why bother with expensive, dedicated art packages when all the drawing commands and colour controls you'll ever need can be accessed using BASIC commands? Okay, because they're about a zillion times faster and easier, I suppose. But since is a series about programming BASIC, we're going to have to do things the hard way. Believe me, the experience will do you the world of good and you'll be a better person for it.

This month's program for dissection will draw a simple on-screen space scene with a rocket heading for the stars. For starters, let's have a look at the complete listing:

```
10 CLS
20 REM little stars
30 FOR n=1 TO 8
40 READ x,y
50 PLOT x,y
60 NEXT n
70 REM rocket body
80 MOVE 150,60
90 FOR n=1 TO 6
100 READ x,y
110 DRAW x,y
120 NEXT n
130 REM top fin
140 MOVE 100,150
150 DRAW 70,190
160 DRAW 170,190
170 REM speed stripes
180 MOVE 90,130
190 DRAW 10,80
200 MOVE 100,100
210 DRAW 20,30
220 MOVE 120,70
230 DRAW 50,10
240 REM big star
250 MOVE 500,360
260 FOR n=1 TO 10
270 READ x,y
280 DRAW x,y
290 NEXT n
300 REM colour it in
310 MOVE 200,150
320 FILL 3
330 MOVE 500,300
340 FILL 1
350 MOVE 170,50
360 FILL 2
370 MOVE 100,170
380 FILL 2
390 DATA 100,300,150,370,250,340,320,380
,350,70,420,100,500,150,600,100
400 DATA 300,160,340,240,250,240,100,150
,170,20,230,110
410 DATA 530,320,570,310,540,280,540,230
,500,250,450,230,460,280,420,310,470,320,
500,360
```

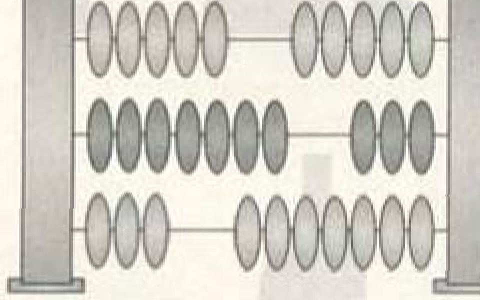


Last month we took a look at the basics of programming on your CPC using characters and numbers. But manipulating data is only half the story; a large proportion of most programs is taken up by graphics instructions. The four main instructions for manipulating graphics on the CPC are move, draw, plot and fill.

Screen set-up

But before I tell you about these the most important thing to know is how the screen of your Amstrad is set up. The best way to think about graphics on the CPC is to picture your monitor's screen as if it were a grid separated into 254,961 little squares (639 graduations horizontally and 399 graduations vertically).

If you take a piece of graph paper and put a mark on the page the way you tell



someone else where your mark is by giving them the co-ordinates of the point in the form of two numbers x and y. The two numbers represent how far along (x) and how far up (y) that point should be. Co-ordinates are given in the order x,y (if you forget which way round the x and y go just remember that you go ALONG the corridor and then UP the stairs).

Gonna make you a star

Now it's time to get down to actually drawing something on screen – for now let's just concentrate on putting dots of colour in specific parts of the screen. For this we'll use the plot command.

Say we want to put a dot bang in the middle of the screen; that will be at x=320 and y=200 (ish). Just type in PLOT 320,200 and hit return. You should see a single dot appear right slap bang in the place you wanted it, 'cos that's what plot does (colours one pixel at the co-ordinates you give it).

For our drawing I thought it would be nice to sprinkle a few stars (single pixel dots to you and me) in the background to give the picture a sense of depth. There are eight dots in total to put on the picture. You could write eight lines of program to scatter them, like this:

```
10 plot 100,300
20 plot 150,370
```

Basically BASIC was brought to you this month by these instructions...

CLS – Clear the screen
REM – This stands for remark and tells the computer to ignore any text that is contained in the line that follows.
READ X – Tells the program to find a data statement and assign the appropriate character or string to this variable x.
FOR NEXT LOOPS – A short and concise way to instruct Arnold to do the same thing over and over again.
PLOT X,Y – Colour in one pixel on-screen at these coordinates.
DRAW X,Y – Draw a line from where the cursor's current position to the co-ordinates repesented by x and y.
MOVE X,Y – Move the invisable cursor to these co-ordinates without making any marks on screen.
FILL (number) – Fill the space that the cursor is presently in with the colour represented by this number.
DATA – Data statements are what the program looks for when you give the instruction READ. They consist of lists of data seperated by commas. Every time a piece of data is used it's ticked off the list and Arnold won't read it again unless you order him to RESTORE, in which case he'll go back to the beginning of the very first data statement in your program.

The sky's the limit



Okay, it may not look much, but I'm no artist and it's the theory I'm explaining here. If you do come up with anything that's any good you could use it as an intro screen for another program. Just put in a loop at the end to instruct Arnold to wait until a key is pressed to go on to the next section of the program – I'll show you how to go about doing that later in the Basically Basic series. Stay tuned folks.

```
30 plot 250,340
40 plot 320,380
50 plot 350,70
60 plot 420,100
70 plot 500,150
80 plot 600,100
```

However, there is a much tidier way to instruct Arnold to do exactly the same thing which involves learning about two new operations; reading data statements and using FOR NEXT loops. These all basically a better (and less long-winded) way of doing the same operations again and again but using different variables.

First the loops; a simple looping program would read something like this:

```
10 FOR m=1 to 5
20 PRINT "hello"
30 NEXT m
```

This will print on-screen the word 'hello' five times in succession. Basically, the first and last lines tell the computer to follow the instructions in the middle five times. If you wanted it to print 'hello' ten times then just alter the parameters in line 10 to read: FOR m=1 to 10. You can put any number of instructions in the middle of the loop including commands to read data statements.

Data statements are lines of your program in which to store variables that can be called up at any time during the running of the program. They consist of the line number (more often than not data statements are to be found at the end of programs, for neatness more than anything else), the word DATA and the list of numbers or characters separated by commas. For example:

```
10 DATA 1,2,3,4,5,6,7
380 DATA Clur, Simon, Mary, Dave, Andy,
Boris, Colin
1460 DATA 34592
```

Now we've got that cleared up, let's take a look at the first section of the rocket program (which incidentally achieves the same result as the eight plot commands listed above).

```
30 For m=1 to 8
40 READ x,y
50 PLOT x,y
60 NEXT m
```

It's just a FOR NEXT loop with a READ and PLOT command contained within it. Eight times, and eight times only, the program will read two numbers (if you were reading characters the variables would have to be x$ and a$) from a DATA statement. Then it will PLOT the point represented by the co-ordinates it has just read. The DATA statements that it uses are hidden away at the bottom of the program:

```
390 DATA 100,300,150,370,250,340,320,380,
350,70,420,100,500,150,600,100
```

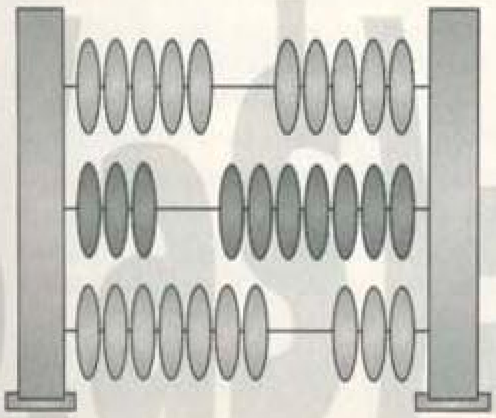
The best thing about using data statements is that Arnold remembers which lumps of data you've already used and goes on to READ the next bits when you ask it to READ again. For example, the following program...

```
10 FOR m=1 to 2
20 READ x
30 PRINT x
40 NEXT m
50 DATA 3, 6, 9, 7
60 END
```

...would, when run, print out on screen:

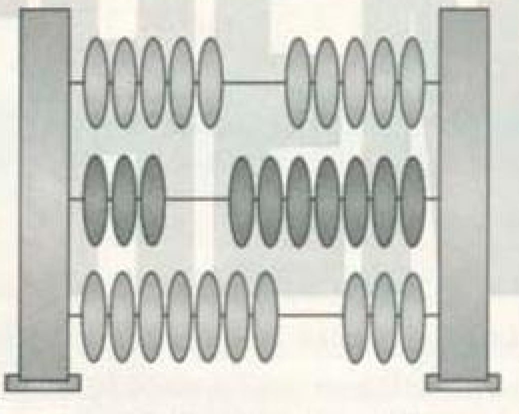
```
3 6
```

At line 20 it READs the first number (3), assigns the number to the variable x, ticks that off, prints it and updates m's value by adding 1 to the 1 we started with to make m=2. Then it loops round and looks for the next item in the data list which is the number 6, ticks it off and prints it. Then it updates m again. At the instruction on line 40 the CPC goes back to line 10 but as m now equals more than two it ignores the loop and goes on until line 60 where the program ends.



Lift off

The next section of the program, which starts on line 70 with a REM statement, draws the outline of the rocket itself. First of all you need to move the cursor to where you want the starting point of the rocket body to be, the bottom-most point of the rocket; the coordinates for that are x=150, y=60. Use the command MOVE 150,60 to move the cursor from its current position to the



starting point without drawing anything on-screen between the two points.

The next command we use is to draw lines from one point to another. We're already at 150,60 so the command DRAW 300,160 will draw a line on screen between those two points. The next DRAW command will draw a line starting from 300,160 to the co-ordinates you set. Instead of having a long list of draw commands I've set up a FOR NEXT loop with READ and DRAW commands within it (as before with the little stars). The data for this loop is contained in line 400 – Arnold knows to look there for the data because he's already used up all the data from line 390 for plotting the stars.

After the rocket the speed stripes are next (starting on line 170). I could have set up a loop to do this with but that would use up more space than just doing the MOVE and DRAW commands separately. This bit just draws three sloped lines at the base of the rocket to give a feeling of movement (little tip I picked up from Andy there).

The next important section of the program begins on line 300. On the Amstrad the fill-in command is one of the simplest in BASIC. All you have to do is move the invisible cursor to a point inside the shape you want to fill with a specific colour and order Arnold to fill that space.

On start-up there are four colours at your disposal: blue, yellow, cyan and red. Each colour is represented by a number – 0, 1, 2 and 3 respectively. Rockets look good in red so to colour the rocket body in we simply move the cursor to a point inside the rocket body (line 310 MOVE 200,150) and then fill the shape there with the command FILL 3 (line 320). The star we fill in with the colour yellow (lines 330 and 340) and the fins of the rocket look good in that greeny blue colour they like to call cyan to be posh (lines 350 to 3800). If we wanted we could fill the background in the same way but the sky is blue so we might as well leave it as it is.

Next Month

That's it for this month's installment of your all-new hands-on approach to BASIC programming course. Next month I might take you through a simple pools coupon program. But I don't know whether I should be encouraging gambling. But it'll be something to do with random numbers, anyway. TTFN.

Assembly Line

Beyond time, beyond space, beyond your wildest imagination... Simon Forrester's monthly machine code tutorial goes where no monthly machine code tutorial by Simon Forrester has gone before – disk operations.

Don't you just love the sound of screaming tape users? I do, because I'm cruel like that. Which means I'm going to enjoy the next bit, because this month I'm going to be dealing with disk operations. Fear not 464 users (darn it – my better nature gets in the way again) as some of this will be relevant to you (yeah – the really boring bits). I'm going to start by looking at disk formats.

All formats fair

Well, you try coming up with a decent sub-heading for this one. The fact that it's a very obvious lie has nothing to do with it (I'll be fair to users of all formats except tapes). Anyway, a disk is laid out with 40 tracks (as opposed to a record having one groove spiralling around, a disk has 40 concentric rings). Each of these tracks is split into nine segments, known as sectors. A sector can hold up to 512 bytes, or half a kilobyte, making one side of a disk (these things are double-sided, you know) capable of storing 180k.

There are two types of standard disk formats that the CPC uses (there is a third, but I'd be wasting my time – no-one has ever used it). The first is data format. This is the most used disk format, as you can store a huge 178k on each disk (2k is given away to a directory of what's on each disk). The second is system format (aka, vendor) which can hold only 169k, having wasted the rest of the space on a lot of useless junk (and making it a pretty pointless alternative). Let's look at that a little more clearly.

Format	*KB*	*Sectors*
Data	178	&C?
System	169	&4?

You may be confused by the right-hand column in the above table. It's easily sorted, though; if your disk is a data format, the sectors of each track are known as sectors &c1 to &c9, whereas if you're using a system format, the sectors are numbered &41 to &49.

Let's try reading one of those tracks, then. If you've got a data disk, let's read track zero (did I mention that the tracks are numbered 0 to 39?), sector &c1, and see what we can see:

```
BIOS: Read Sector - &C666
      HL - Address of buffer
      E - Drive number
      D - Track number
      C - Sector number
```

So this is a firmware call that reads a certain sector from a certain track from a certain disk, and puts the 512 bytes at the address held in HL. The drive number would be zero for drive A, and one for drive B. Let's look at that in a listing form:




```
        ld hl,&5000
        ld de,&0000
        ld c,&c1
        rst 3
        dw secred
        ret
.secred:dw &c666,&07
```

Just about the only thing that you might have been caught out on here is the weird firmware bit. It's a very simple principle – the routine we need is stuck in the disk ROM (slot seven), and the italicised section at the bottom of the listing is just a very simple way of accessing that ROM without having to mess around with thousands of fiddly, irritating little initialisation procedures.

There now, wasn't that easy? But what would happen if we wanted to write a sector instead? There's another disk firmware call that might just help us out, and here it is in all its glory:

```
BIOS: Write Sector - &C64E
      HL - Address of buffer
      E - Drive number
      D - Track number
      C - Sector number
```

It doesn't take a genius to work out that the two calls are almost exactly the same, except for the fact that instead of taking the information from a sector and placing it in memory, the 512 bytes starting at the address held in HL are placed straight on to the disk. However, I really wouldn't advise writing any sectors to any disks until you've figured out what exactly you might be writing over – there's no way of recovering over-written sectors, so be careful.

These boots are made for loading

The only real problem is that you can't start writing randomly over sectors if you want to keep other files on your disk without having to sit and work out what sectors are used by which programs. There is another solution, though, and it's a little more straightforward than asking the user to run a single file that'll do all the loading. Unfortunately, it means dipping our toes slightly in the world of CP/M.

CP/M, for all those who don't know, stands for Crazily Programmed Mess. And it is. If we completely ignore the majority of the system and just use the odd bit we want, though, it can be of use. Remember those disks you got with your machine, loaded once, read the manual which stated that once you'd touched the disks with any part of your body your entire existence belonged to Amstrad, panicked and pretended to lose them in the polystyrene packaging? If you can remember that far back, you'll remember that, in order to load CP/M, you needed the BASIC command '|CPM'. All this command was actually doing was taking the first sector from the first

I can't get ZAPP to work!

I've had the odd letter from people who're still having incredible problems with ZAPP and labels. Let's start from the beginning. Let's say, for example, you have to enter the following lines of code:

```
.loop  :rst 3
        dw secred
```

When you enter the line into *ZAPP*, all you need to do is type:

```
loop:rst 3
dw secred
```

And when *ZAPP* displays it, it should look something like this:

```
loop  :rst 3
2       dw secred
```

And there we have it. If anyone else dares to ring or write about this, I'll kill them.

track of a system format disk, loading it into address &100, and running it.

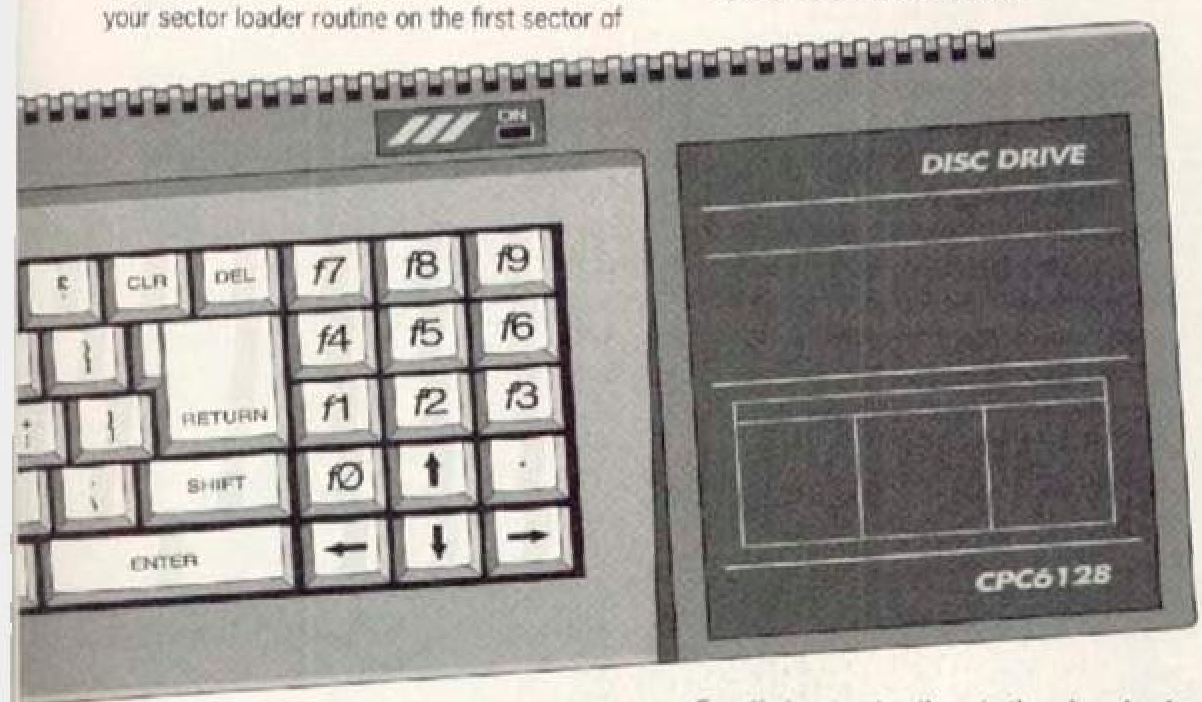
We can use this feature to our own advantage, as, if you format a disk to system format and put your sector loader routine on the first sector of the first track, the user can load the whole thing with an ICPM command. So as long as your first loader is under 512 bytes long (and that's not difficult, is it?), you can use the system perfectly. One other point to remember is that, as the disk isn't going to be accessed by BASIC or CP/M in any real sense, you don't have to worry about the various tracks and things that system format disks are usually weighed down with, and use the entire 180k. Let's take a look at a loader.

On toast

I like *Chuckie Egg*, me. As a game, it's a nice single file thang that we can use to adequately demonstrates the success (or otherwise) of your routines, without requiring you to do any hacking to get at the file in the first place (we might cover cracking protection systems at a later date, if Dave can hold off the law suits for long enough). Before the original author gets all uptight, I'm not advocating the unauthorised piracy of this game, and I'm not giving away any information that anybody with a rough technical knowledge of the CPC couldn't work out for themselves. We'll check out the tape version. If you look at it, you'll find it contains a very simple BASIC program to print a few things on screen, which then runs the machine code file – the file has the following attributes:

File	CHUCKIE.BIN
Addr	&8000
Lngt	&233E
Exec	&9A97

So, all we have to do is load the file into memory, and write it out into individual sectors. How many sectors is &233E, though? Well, in decimal, that makes 9022 bytes, the best part of 9k, and 18 sectors on a disk.



Exactly two tracks, then. Let's write a loader that'd read two tracks from a disk, place them into memory and execute them as if they were *Chuckie Egg* (see – I'm not going show anyone how to copy it, even though it's not protected):

```
        org &100            } 1
        limit &2ff

        ld e,&00            } 2
        ld d,&02
        ld c,&41
        ld hl,&8000

.loop  :rst 3               } 3
        dw secred
        inc c
        ld a,&ca
        cp c
        call z,trkinc
        push de
        ld de,&200
        add hl,de
        pop de
        jp loop

.trkinc:ld a,d              } 4
        cp 3
        jp z,&9a97
        inc d
        ld c,&41
        ret

.secred:dw &c666,&07
```

Right, let's take a look at what all the different bits of that listing do:

1 These two lines set both the location and code limit for the program you're creating.

2 Next, you have to set up your starting track, sector, drive and address values, ready to be incremented within the main loop.

3 This is the main loop of the program. All it's doing is reading the sector into the memory address contained in HL and looping. When you run out of sectors (the count reads &CA before the track is read), the routine 'trkinc' is called into action.

4 All that's going on in this part of the program is that it is checking which track it has reached the end of, and running the game if it's reached the final track. If, however, it's reached the second track the program returns to the main loop, where it reads in track three.

On an even grander scale

As well as making the whole affair slightly easier to understand, this program is written with larger program sizes in mind – to read in a different file, all you need to do is alter the starting variables (stating whereabouts the program sits on the disk) and the compare instruction in 'trkinc', because that decides when to stop reading (you'll have to change the execution address as well).

And so, here ends the sermon according to the Rev. Hairy for this month. AA

Next month

Gretel: "I know this catalogue is supposed to have the complete guide to summer clothes, but I just can't find what I want."
Hansel: "So you need a way to look beyond the realms of what conventional society calls 'a catalogue' and reach the uncatalogued warehouses of swimwear."
Gretel: "An extended catalogue, is, I take it, what you mean."
Hairy: "Did I mention that I'll be covering extended catalogues next month in Assembly Line?"
Hansel: "Where the hell did this propeller head appear from?"
Gretel: "Yeah – naff off out of our story."
Hansel: "Is it just me, or is Simon getting a bit desperate with these Next Month bits?"

Back issues

All these Amstrad Actions are still available with the covertapes!



AA66: Features: Complete guide to games-playing, simulators. Reviews: *Supercars, Robocop 2, North and South, Strider 2, Mystical, Golden Axe, Narco Police.*
AA75: *Cisco Heat* (demo), *Impossaball, Tir Na Nog*. Inside: Buyers' guide to peripherals.. *Smash TV, Turtles Coin-Op.*
AA76: Covertape: *Graphic Adventure Creator, PageMaker Plus, Southern Belle, Extended BASIC for 464 owners*. Inside: Peripherals part 2, *Dizzy's Excellent Adventures, The Simpsons, Super Space Invaders, OutRun Europa, Cisco Heat, Pitfighter.*
AA77: Covertape: *Seymour Take One* (mini game), *Firelord, Football Forecaster*, Fonts. Inside: The French Connection, GAC tutorial. Reviews: *You're Learning* (educational pack), *Paperboy 2.*
AA78: Covertape: *Space Crusade* (demo), *The Sphinx Jinx, Shockway Rider*. Inside: Guide to PD. Reviews: *Space Crusade, Double Dragon 3.*
AA79: Covertape: *Ranarama, Maze Mania, Meaning Business* (suite of business utilities). Inside: Behind the scenes at *AA*. Reviews: *Blues Brothers, Rodland, Prehistorik.*
AA80: Covertape: *Stryker and the Crypts of Trogan* (demo), *Anarchy, Croco Magneto, GPaint*. Inside: How a game is made (Seymour), buyers' guide to word processors. Reviews: *Titus The Fox, Stryker.*
AA81: Covertape: *Forbidden Planet, The Addams Family* (demo), *Sprite Designer*. Inside: Fanzines, buyers' guide to DTP.
AA82: Covertape: *Lemmings* (demo), *Dragontorc, PowerPage*. Inside: Making dosh from programming, guide to art packages. Reviews: *Lemmings, Addams Family.*
AA83: Covertape: *Defenders of the Earth* (demo), *Drehdriss, Supersonic* (music). Inside: The French CPC scene, buyers' guide to educational software. Reviews: *Turbo the Tortoise, Grell and Fella.*
AA84: *Famous Five on a Treasure Island, Notepad, Liteprog*. Inside: 3D games. Reviews: *Hideous, Brunword ROM.*
AA85: Covertape: *On The Run, Link, Worktop, Disk Organiser*. Inside: Making music. Reviews: *American Tag Team Wrestling, Soccer Pinball.*
AA86: Covertape: *Glider Rider*, animation utilities. Inside: MIDI music. Reviews: *Wild West Seymour, Reckless Rufus.*

AA87: Covertape: *Nexor, Pakman, MPack, Pilot* (very simple programming language). Inside: Dizzy, this is your life. Reviews: *Football Manager 3, Super Seymour.*
AA88: Covertape: *Tankbusters, Penguins, JL-Copy* (tape to disk utility). Inside: Videomaster, top CPC add-ons. Reviews: *The Shoe People, Crystal Kingdom Dizzy, Robin Hood.*
AA89: Covertape: *Wriggler, MagicDOS, Superchars*. Inside: The European demo scene. Reviews: *ZapT'Balls, Crazy Cars 3.*
AA90: Covertape: *Steve Davis Snooker, LARA* (Machine Code Utility). Inside: 100s of Multiface POKEs. Reviews: *Nigel Mansell's World Championship, Popeye Collection.*
AA91: Covertape: *Tasword, Colossus Chess*. Inside: The future of the CPC, WP tips.
AA92: Covertape: *BooTracker* (music program), *Syntax, Balloon Buster*. Inside: Complete guide to data storage. Reviews: *Soundtrakker, The Simpsons.*
AA93: Covertape: *Racing Boxform, Mystical, Who's Afraid Of The Balrog?* Inside: Spreadsheets and databases, UAUG interview, setting up a PD library. Review: *Super Cauldron.*
AA94: Covertape: *Instant Recall* (database), *Contraption*. Inside: The best of everything – the *AA* awards ceremony. Reviews: *MicroDesign 2, Disc Archiver, Prehistorik 2.*
AA95: Covertape: *MasterCalc* (spreadsheet), *Biff*. Inside: *Street Fighter 2* – the myth starts here. Reviews: *Pro-Ext, SmArt Plus, Trakers.*
AA96: Covertape: *Screen Designer, Nell Android*. Inside: ROM round-up, Campursoft interview. Reviews: *ZXM, Xexor*, Cart round-up.
AA97: Covertape: *Zzap Assembler, Rik The Roadie*. Inside: The best software for under £5, debugging. Reviews: *Ultimate Sprite Searcher, Forth, Galactic Warfare, Ball Bearing.*
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AA100: Covertape: Elite. Inside: The Top 100 CPC products ever, a look back at 100 issues of *AA*. Reviews: *Touchdown, Page Publisher.*
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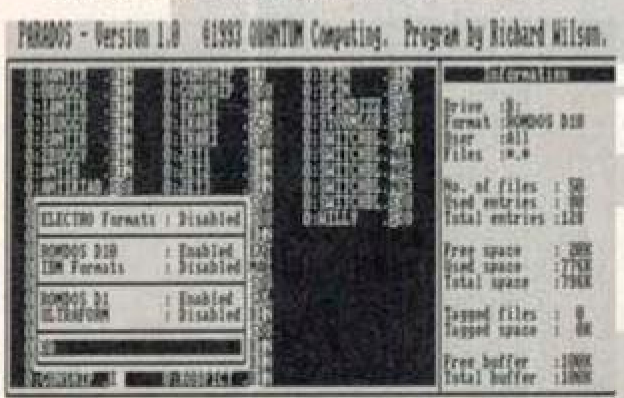

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Techy Forum

Programming problems? Perplexed by your printer? Puzzling over your POKEs? Never fear. Richard Fairhurst is here to solve all these mysteries and more.

The 3.5-inch question

I have a 464 Plus with a 3.5-inch A drive and 128k. At the moment I am using the system disk supplied with the disk drive from Siren Software to format my disks to 178k. If I bought the MS800 disk, would it be possible to format to 800k, even though my 3.5-inch drive is an A drive? Also, is it possible to use double-sided 3.5-inch disks – my drive is single-sided and doesn't have a side switch – by manually turning the disk over to use the other side? I ask this question because I want to buy PD games, but PD Fun and Presto PD use double-sided disks.
Duane Saunders, Colchester



If you actually manage to get a copy out of Quantum, *ParaDOS* is well worth having.

Yes, this would be possible using MS800. However, Quantum Computing's *ParaDOS* is a zillion times better *(see Simon's review in AA99)* and it offers more features. Telephone Quantum on 0446 746920.

Sorry, you can't flip 3.5-inch disks over and use the other side. You could fit a side switch, which would be easy. Alternatively, *ParaDOS* provides features for side-switching controlled by the computer – MS800 doesn't.

By the way, the PD libraries probably won't mind copying programs on to just one side of a disk if you send twice as many disks. You should check this with them first. **Richard**

Pump up the CPC



1 If I plug headphones into the I/O port on my CPC464 (very old version), I can barely hear the sound, but the stereo effect is brilliant. Is there any way of making it louder and, if so, how?
2 Could you do a round-up of the software available on ROM? I mean, you have done one on carts.
3 How about putting a decent spell-checker on the covertape?
4 What is the small connector on the back of my Rombo ROMbox for, and how do I use it?
5 Are there going to be any more upgrade projects – say for the older machines?
6 A little advice to anyone with a ROMbox – get the public domain games ROM from Avatar, as it is good fun just to play the simple games at a keypress.
7 What is the 12v DC on the front of my CTM 644 colour monitor for?
8 What package can I get that allows the import of graphics into *Protext* on ROM?
9 Will *GPaint* go on to ROM, and if so, who could do it for me and for how much?
10 I do very large text on *Protext* and have managed to get the computer to come up with 'no memory spare'. Would a memory expansion help, and which one should I go for?
11 Will the 256k silicon disk work on my machine (no disk drive at present)?
Andrew Smith, Plymouth

1 The socket is meant to be connected to an amplifier, or a hi-fi with an AUX socket, rather than to headphones. You can either find an amplifier and connect it between the CPC and the headphones, or buy a CPC-dedicated sound set-up – Siren Software's Personal Sound System will do everything you need (☎ 061 724 7572).
2 Issue 96's special should have told you most of what you need to know; sadly, a lot of the ROMs that were available a few years ago have disappeared from the market.
3 We'll see what we can do.
4 It's for a 'sideways RAM' unit manufactured many moons ago by Rombo. This acts just like a

Top Tips

Memory man

There's a bit of confusion about the amount of memory you can use in a machine code program (try initialising AMSDOS from Siren Software's *Hackit*, for example, and note where it suggests you locate its workspace). Free CPC memory runs from &40 to &BOFF. Workspace between &AC00 and &BOFF is usually taken up by BASIC, and between &A700 and &ABFF by the disk system. That's not to say that you have to keep these areas free – you're hardly going to need BASIC workspace in a machine code program, for starters, so put the disk system up at &AC00 and you'll have over 1k extra free.

Information nation

A rather knowledgeable chap by the name of Kevin Thacker is producing a complete guide to, 'getting the most out of the CPC' – firmware calls and chip programming details included.

Kevin has kindly said that he will send a free copy of the text files to anyone who asks. If you want to contribute to the project, he is also on the lookout for more information.

Write to him, enclosing a disk, at: Fairhaven, Whiteway, near Stroud, Gloucestershire GL6 7EP (remember to enclose an SAE with your disk).

Keep it tidy

Debugging is the least enjoyable part of producing a computer program. One way to make it easier is to ensure that your programs are laid out sensibly. That way, you'll know exactly which bit does what, and any confusion should become apparent.

The most obvious suggestion is to make sure that you always, "comment your code". This means using REM statements in BASIC programs – how you do it in machine code depends on your assembler – to document exactly what each subroutine and each section of the main program does, what registers or variables it changes, and so on.

A program is much easier to understand if commands are grouped sensibly. One huge slab of code tells you very little but careful use of multiple-statement lines (more than one command on a line, separated by colons) can make it more obvious which statements go together in a routine. It helps to leave a space between routines. In machine code source files you can leave a blank line. With BASIC programs you will need to enter a line consisting of just one colon.

Probably the best tip, though, is to indent loops, so that every line between the FOR and the NEXT of a BASIC program has an extra space at its start. This makes it very obvious if you miss a NEXT statement, for example, and helps clarify the structure of nested loops (ie, loops within loops). Machine coders will also find it useful for PUSHes and POPs — an extremely common source of frustration.

Horror story

Mrs M Blackmore wrote in with a cautionary tale about how it pays to make back-ups. Her *Mini Office* disk, together with over 50 documents and a large address database, decided to stop working over Christmas. Unfortunately, disks do this every so often. It's all very well to say, "keep back-ups," but the need only hits home when something like this happens.

Mrs Blackmore then described how she bought some cheap disks which wouldn't at first format. When she copied a working disk on to the cheap disks and erased the files they were okay. Aaaaaargh. If a disk doesn't format, there's a good reason for it. Don't try to push your luck and risk another disaster – throw it away.

A star is born

I have recently purchased a Star LC-100 colour printer, but I am stuck. How can I change the colours without a driver for a word processor? Could you please tell me how to change the colour in BASIC, Tasword 464 and *Brunword Elite*?
Jonathan Phillips, Ilkeston

Printer codes are often complicated but, thankfully, the Star printers make it very easy to select a colour. Send the text ((C)) (two opening brackets, a capital C, and two closing brackets), followed by a number from 0 to 6 specifying the colour, such as 1 for red, and 2 for blue. You could just embed this in your document in *Tasword* or *Brunword* and, in BASIC you can send it to the printer using PRINT #8 as you would any other text. **Richard**



Whoops

I have just purchased a Citizen 120D Plus printer which the manual says will work with a CPC but I can't get it to work. I've tried printing out from *Tasword* and from BASIC. All it does is move the printer head a few characters to the left and back. Please help!
No name, Lowestoft

Erm... I hate to ask you this, but are you sure that you've got the printer cable the right way up? Try turning it the other way up at the CPC's end. You should have more luck. **Richard**

And finally...

Many thanks to David Candlish of Coventry, who lent us a DMP-1 manual (which I asked for in a previous Techy Forum). *PowerPage 128* (available from the revamped Robot PD – see Amscene on page eight for further details) should now be compatible with the beast which should prove useful to owners of Amstrad's first ever printer.



Tip of the month: never, ever, ever get nostalgic about *Crystal Tips and Alistair*. It was, is and always will be utter drivel.

ROM chip, but you can change its contents. Its main function is to aid ROM development. Another example of 'sideways RAM' is the Microstyle RAM-ROM.

5 There isn't really any way in which you can upgrade the older machines internally. The 464 Plus is just crying out for more memory and a disk interface because it is exactly the same design as the 6128 Plus, with slightly fewer components. This also explains why it is so easy to put a tape interface on a 6128 Plus. The old 464 and 6128 are completely different in design, and there is no easy way to upgrade either model.

6 Please note that *AA* takes no responsibility for lost sleep or lack of productivity caused by repeated playing of Auntie John's rather good *Pacman* game on the ROM. (Phil Craven's Avatar can now be contacted on ☎ 0274 602180).

7 It's for a 664 or 6128 – to power the internal disk drive.

8 Sentinel Software's *Pro-Ext* is the only package to offer this feature (☎ 081 876 7032). It so happens, I wrote it.

9 Theoretically you could get it on to ROM, but it would require some fiddling – the normal disk-to-ROM conversion software supplied with an EPROM programmer doesn't work with a part-BASIC, part-machine code program like *GPaint*. Best to leave it alone.

10 No, that wouldn't help. The CPC only has 64k main memory, which is the memory that almost all programs use for their principal storage area: for example, *Protext* can't do anything with the extra memory of either a 6128 or a memory expansion.

11 No. But this is no great loss, because a disk drive is a far better investment, and if you haven't got one, start saving your pennies. **Richard**

PC attitudes

I have some important documents created in *Protext* on a CPC 6128 that I would like to be able to import into a DOS-based word-processing package (*Microsoft Word*, or *Word for Windows*) on my PC at work. Please could you tell me how and where I might be able to get *Protext* files translated into *Word* format or ASCII text files?
PG Hayles, Wiltshire

Enter *Protext* and load your document. Then, at the command line, type PROG to enter program mode, then PF. Now enter the filename you want to save the ASCII file as, and it will be generated for you.

You'll also need to save it on to a disk which can be read by the PC, which means a 3.5-inch disk in DOS format. Assuming you have a 3.5-inch disk drive, all you need is a PC disk utility to transfer the file on to the disk, like the superb shareware *DOS-Copy*. You can get a copy of this from most PD libraries – try Sheepsoft, Dartsma or Presto. **Richard**

Video star

I am currently trying my best to write a program which will keep records of videos and members of a video club. I am using the arrays of the 464's memory to control who has what and to hold the information I require, ie, members' names and addresses, when the videos were borrowed, etc. That's all fine until I come to saving the arrays and reloading them into memory. To be honest, I don't know zip about binary codes.

I have tried to save the arrays as binary, but I can't. It's driving me up the flamin' wall. Can you help? I don't understand how to find the start address, the length or the entry point (whatever the heck that is).
Robert Watkins, Deal



Hang on. Where have you got the idea that you need to save the arrays as binary? I mean, let's think about this for a moment. A BASIC program is held in memory, and you don't save that as binary, do you?

Forget that idea. Instead, here's what you need to do. First of all, 'open' a file for output using the command OPENOUT 'filename'. You can then send all the arrays to this file using PRINT to stream #9, and when you've finished, CLOSEOUT. So, if you had 50 members and their names were held in the array n$, here's a program you could use:

```
100 OPENOUT "names.dat"
110 FOR n=1 TO 50
120  PRINT #9,n$(n)
130 NEXT
140 CLOSEOUT
```

To reload the data, use the commands OPENIN and CLOSEIN instead, and rather than PRINTing to #9, INPUT from there instead. To turn the above routine into a reloading routine, first of all you would need to alter lines 100 and



This is the voice of the Mysterons. You will reveal all your techy problems to Richard Fairhurst. You will disclose your programming hints and tips to other AA readers. Write now to: Techy Forum, *Amstrad Action*, Future Publishing, 30 Monmouth Street, Bath, Avon BA1 2BW.

140 into OPENIN and CLOSEIN commands, and then replace the PRINT in line 120 with LINE INPUT (it doesn't matter if you have a comma in the middle of string data.)

It beats messing around with start addresses and entry points, doesn't it? **Richard**

Squeak

I have 101 problems that need answering, but I will try this one out first. I bought a second-hand 6128 with colour monitor, lots of games and an AMX mouse.

It's the mouse that's causing the problem; when I connect it up, a few lines of garbage appear on the screen then the computer completely locks up. I hope you can help – I have learnt what little I know by reading *Amstrad Action*.
S Jerromes, Birmingham

The mouse isn't designed to be plugged straight into the computer (this is because a joystick detects which direction you're pushing in, whereas a mouse detects the speed of movement as well). It needs an interface to work properly, otherwise you'll get results like those you described. Unlike some other computers, ie, the Macintosh, Amiga and the ST, the CPC doesn't need a mouse to be operated so don't worry too much.

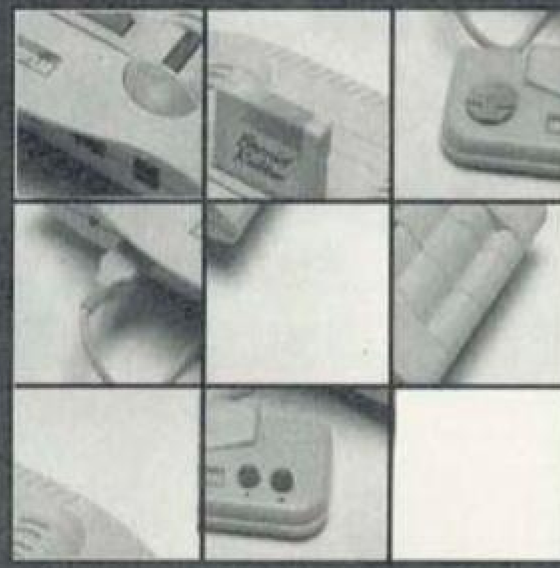
There should be an interface with your set-up, together with a manual describing how to set it up. If not, place a 'wanted' ad in the Small Ads section (starting on page 35 in this issue), that's what it's there for. **Richard**

This is the picture

I have drawn a picture with *Screen Designer* from your covertape and I can load it into BASIC using the command LOAD "!PICTURE",&C000. However, there is one thing which is puzzling me. Sometimes, or rather, most of the time, when I load it in, it is disjointed. Different sections appear at different points of the monitor. Why is this and how can I stop it? Please help.
Justin Williams, Bridlington

It's easy to stop. Make sure that, immediately before you load the picture, the screen mode is reset using a MODE command.

A detailed explanation of why isn't really much use unless you understand the complex workings of screen memory. But here's the general idea. Every time the screen scrolls, its 'start address' – the point in memory where the record of what's on the screen starts – will move. It's usually at &C000 but, scroll the screen up one line, and the start address will become &C050. However, you are still loading the screen into &C000, and this difference in start addresses causes the disjointed effect. A MODE command resets the start address to &C000, so use one of these and don't scroll the screen afterwards! **Richard**



A corrupted CPC picture, geddit? (Well, it's a GX actually, but you get the idea.)

What a din

I recently bought (unwisely, I think now) a CPC6128 Plus. To my amazement I found no DIN socket at the rear of the machine for connecting it up to a cassette player.

Is it possible to do so by some other means? I see that Avatar advertise a 6128 Plus tape port DIY kit. Will this do the job? Would it be difficult to set up?
Fergus McCarthy, Cork

The Avatar (☎ 0274 602180) kit will do the job perfectly and, if you can cope with a bit of soldering then you should be able to carry the instructions out quite easily. We printed a hardware project on how to upgrade your 6128 Plus to cassette compatibility *(issue AA92)*. You may find it helpful. And once you've finished the project, you'll be able to load and play cassette games just like any 464 owner. And that's yer lot for this month. **Richard**

Never mind the read fail

I have a disk containing nine *Protext* files which I use monthly and continually update. After use I erase all the BAcKup files. I did this the other day and, to my horror, when I tried to CAT the disk to ensure that my files were intact, I only got the message, 'read fail'. I got the same result when I tried to access the files.

Using a wonderful piece of software called *Nirvana* (*a general-purpose disk utility, a bit like* Xexor *or* Discology *but nowhere near as good – Richard*), I formatted a new disk and copied the old faulty disk to the new one. To my delight I retrieved it all, but in copying tracks one and two a read fail message flashed on the screen. However, when I tried to CAT the disk the screen filled with information in MODE 0, so only a portion could be read. I then experimented by using an old Type-In called *Dirprint* which printed out the catalogue of the new disk, apart from one entry of gobbledygook. This gave me the titles I wanted. I formatted another disk and copied the individual files one at a time. To my delight I had a working replica of the original.

I realise that the first two tracks were causing the problem, but I am surprised that I was able to do so much – an explanation would be appreciated.
HR Nightingale, Huntingdon

One side of a disk can contain a lot of information – 180k. To be able to handle all this, the CPC has to keep a notepad of where each program is stored on the disk. It does this in an area known as the 'directory'. Every time you try to catalogue the disk using the CAT command, it reads the directory. Every time you try to load a file, it reads the directory to find out where the program is stored, and so on.



This poor soul obviously forgot to back up his disks. Let that be a warning to you.

Guess where the directory is stored on the disk? You guessed it – the first couple of tracks, the ones which became corrupt on your disk. As you can imagine, having such an essential part go wrong is about the worst thing that can happen to a disk.

So how did you manage to save so much information from the magnetic wasteland in the sky? *Nirvana* read as much information as it could and wrote it out to the disk again. A few bits would have been corrupt but, just because a track is reported as 'corrupt', it doesn't mean that nothing can be read from it. Where information was missing, meaningless characters would have been placed on the disk when you copied it; apart from that, the copy would be the same as the original.

Cataloguing the disk produces the normal filenames. It also produces filenames made up of meaningless characters which have found their way into the directory track. Printing these on to the screen caused it to go into MODE 0 and, therefore, everything was unreadable. Thankfully, in *Dirprint* you found a program that doesn't print up the meaningless characters with destructive results – that's how your rescue operation worked. Congratulations! (*Our smug correspondent writes: that'll teach you not to keep backups.*) **Richard**

READER ADS

Bargains galore and much, much more in the CPC second-hand superstore.

FOR SALE

Amstrad games for sale. Over five only 35p each disease. Write to Brian Day, 23 The Spinney, Bedford, Beds. MK41 0HA for a games list or phone Brian on 0234 328414.

Compilation cassettes including Taito coin-op. hits (eight titles), game set and match (eight titles), MultiMixx 1 (three titles). Phone for complete list 071 822 3727. Ask for Roger.

Atari 800XL (ex. cond.) with new data cassette, joystick, handbook, sohe progs. inc. Tutor and Cartridge games. £50 ONO Consider swap or p.ex for Amstrad colour monitor. Phone David on Medway 0634 271290.

CPC 464 mono monitor MP2 for use with TV 150 Plus cassettes, games and software. £130 ONO. Call Derek on 0734 816397 (evenings).

DD1-1 Disk Drive Interface cn/cable with manual. £60. Ashford, Kent. Tel: 0233 635039.

World of Sport game cartridge for the CPC Plus range or GX4000. Boxed with instructions, only £6.50 inc p&p. Phone Russell on 0358 723230.

Amstrad CPC464, 664,6128 compatible cassette games, large selection from £2. List availible. Tel 0582 581259.

Amstrad 464 plus, mono monitor only, still boxed. £30.00 ono. Middlesbourough 467413, code 0642.

6128, colour monitor, multiface, lightpen, 60 tapes, 60 disks, games, programs, Advanced Art Studio, joystick, manual, tape deck, all leads. £175, 0757 248756 Keith.

Amstrad 464 plus upgraded to 6128, colour monitor, loads of games and office tapes, DMP1 printer included but no disk drive. Bargain at £180 ono. Tel Dave on 0784 437265.

Elite on cass, will swap for Moonwalker or sell for cash. For CPC 464. Zahir Ahmed, 32 Chapel Street, Lye, Stourbridge, W. Midlands DY9 8BX.

Amstrad Action and Ace magazines (first issues to recents), pritine condition. CPC 464 games (tape) 50p each - reductions for buying in bulk or collecting. Ring evenings (0865) 378562 - ask for Mrs E Evans

Amstrad 6128 plus, colour monitor and computer, original boxes, over 40 disks, games and educational including miniOffice II, Football Director II, Sim City and Fun School 3&4. Plus AA, ACU and Attack mags. All for £150, 0604 702 635

Games for Amstrads - for a list of disk or cassette games send £1 to Rizwan, 373 Rotton Park Road, Edgebaston, B'ham B16 0LB.. Please state which list is required.

Amstrad 464+, colour monitor DD1-1 disk drive, both hardly used, mint condition, loads of tapes and disks, AA mags, 3D kit, MiniOffice 2, Hollywood pack, Trivial Pursuit. £250 ono. Telephone 0772 313695 after 7pm.

Amstrad CPC 464. Over £1400 of kit, 256k memory expansion, 2x disk drives, printer, joystick, mouse, DTP, word processor, databases, graphics, special fonts, programming books, ect. £650 ono. Ring John 0353 624456.

Portasound PSS-290 Yamaha keyboard. Brand new, includes manual, complete keyboard player book, adaptor and box. Superb condition. Write to Rizwan, 373 Rotton Park Road, Edgebaston, B'ham B16 0LB.

Amstrad CPC 464, upgraded to 6128, green screen monitor, disk drive, manuals, software on tape and disks, loads of mags. £140 ono. Also CPC 6128 green screen monitor £95. Telephone 0272 663809.

Amstrad soft 158. Original copy of CPC 464 operating system firmware specification in first class conditon. £25 ono, ring John on 0353 624456 after 6.30pm.

Colchester, Essex: CPC 6128, green screen monitor, Muliface II, disks, cassette recorder, centronics lead, Brunword, Cashmaster ledger, database, AA mags and tapes, £175, phone David 0206 760377.

464 plus, colour monitor, joypad, 100+ games, Multiface, 25 AA magazines. Games include Lemings, F16, HeroQuest, Turrican, Soccer Stars, IK+ etc. Worth £500+, will accept £230. Telephone 0222 520312, Shabaz after 5pm

Home grown machine code games from strategy to shoot-'em-ups. Good graphics and playability, menu driven. £2.99 plus disk or £4.99. Kevin Heywood, 18 Sinclair Avenue, Banbury, Oxon OX16 7DW.

Galactic Warfare version 4.4, strategic wargame, 2 players, 2 scenarios, various spaceships, missiles, ground units, hidden movement, m/code, keyboard/joystick, save game. Version 4.2 reviewed AA97. £2 + disk/c20 tape + SAE. P Gardener, 2 Crofton Road, North End, Portsmouth PO2 0NT.

Amstrad CPC 464, colour monitor, DDI-1 disk drive, games on tape & disk, Joystick, system disks, 64k memory expansion, all manuals, clock radio, MiniOffice II (disk) £230 ono. Tel Neil on 0900 66316.

Siren 3.5-inch 2nd drive, with manual, side switch, comes with RAMDOS, MS800. Poor paintwork, hence £60. Also Adlan with ROMBOX £40. PAW plus manuals £10. Write to 14 Bute Court, Greenock, Inverclyde, Strathclyde, Scotland PA16 7AG.

Amstrad CPC 6128, colour and mono monitors, TV modulator, DMP2000 printer, aditional 3.5" disk drive, Protext, Word Processor, Mastercalc spreadsheet. £300. Tel John Marshall (Bath) 0225 334290.

38 quality assorted games (cassettes) including Rick Dangerous 2, Loopz collection, Terminator 2 and F16 Combat Pilot. £50 ono. Ask for Joe on 0604 408039.

Mags: ACU — March 1990—May 1992. CPC Attack — June 1992—October 1992, 60p each Plus stamped addressed envelope — big enough for the mag(s) — to: A Swinbourne, 11 Vicarage View, Redditch, Worcs. B97 4RF.

Amstrad Action complete cover story issues one to 100 complete with 44 convertapes. £100. Buyer collects. Telephone Frank on 071 639 9319 (Peckham/Dulwich border).

Amstrad 464 green monitor manuals DDI-1 disc drive.One hundred programs for Amstrad — lots of games, colour modulation, joy stick. £120 ONO. Tel: Eastbourne 0323 647318.

DK'Tronics 256K memory expansion for Amstrad CPL 6128 computer, £70. Tel: 0253 353024. Ask for Alick.

2 x CPC464's. Colour monitors, both with dust covers 3 x joy sticks, loads of games, 1 x mouse, handbook in excellent condition. £225. The lot will split. Tel: 0273 516203 (Brighton area).

Low priced games for sale. Over 100, all less than £10, all on tape, including Bonanza Brothers, Dizzy, Mercs, Nigel Mansell and Back to the Future two and three. Write to Frenzy Productions, 9 Chiltern Close, N.Langney, Eastbourne, East Sussex BN23 8HD.

Magazines: ACU — March 1990—May 1992. CPC Attack — June 1992—October 1992, 60p each. Send stamped addressed envelope — big enough for mag(s) — to: A. Swinbourne, 11 Vicarage View, Redditch, Worcs. B97 4RF.

Amstrad 6128 with colour monitor, joysticks, mouse, 100's of games/utilities. 'A.A.' issues, cassette player and connection leads. All items excellent condition. £325 ONO, ask for Anthony on 0923 510417.

6128, mono, £60. Tapes from 60p. Discs from £1.00. Cassette deck, miltiface and over 400 other items. All must go at silly prices. Call Wayne on 0532 319383 or send sae to 42 Stanley View, Armley, Leeds LS12 1TS.

Amstrad CPC colour monitor for CPC 6128. Perfect working order £65. Buyer to collect. Tel: 0582 391885.

Amstrad CPC 6128 computer and colour monitor. Manual, dust covers, joystick and cassette lead. Disks (18 No.) Plus mini office two, chess and other games. Little used, £140 ONO. Tel. Jon on 0394 383094.

CPC 6128, mono monitor, various games and utilities (word pro supercalc etc) 51/4" disc drive included and cassette deck. All original books and small desk, joystick, lightpen, £150. Tel: 0425 473231.

Amstrad 6128 Plus with colour monitor and TV turner, £75. Mannesman Tally MT81 Printer, £40. Disk games, includes Pirates, Lemmings, £4 each. Disk compilations, includes Megasports, £7 each. For full list send stamped addressed envelope to Colin Attle, 10 Edward Street, Esh Winning, County Durham DH7 9PF.

Stop Press. The ultimate DTP package, AMX mouse plus interface, a must with OCP art studio, excellent condition, £23 each or both for £40. Phone Andrew on 0234 870571.

Amstrad 464 with colour monitor. Over 100 games plus manual and joystick. Very good condition, worth £600 Plus — sell for £250. Tel: Steven on 0895 422271 any time before 9pm.

PEN PALS

Contacts wanted. Any age, country. Swap demos, knowledge, tips, etc. Experienced demo writers preferred. For example of my ability/info. write to: Kevin Thacker, Fairhaven, Whiteway, Nr. Stroud, Glos. GL6 7EP.

Penpals, any age, 14 to 69 (what's wrong with thirteen year olds then? - Ed), male or female who can help me with understanding the Amstrad 646 - am I too old to learn? I know basic, it's the technical part I would like to get to know better. I am 57 with no job. I have plenty of time on my hands. Write to Nora Lees, 285 Franklin Road, Cotteridge, Birmingham B30 1NH.

Female pen-pals wanted. Aged 16 to 20. Please state your hobbies and interests and write to D Townsend, 30 Barlows Road, Tedley, Basingstoke, Hants.

Pen-pals. Aged 13-17, male/female with CPC6128. Would like to swap games and tips. Please write now to Philip Lakin, Tyne-Yr-Ardd, Dyffryn-Ardudwy, Gwynedd, Wales LL44 2ET.

MISCELLANEOUS

Great Value. Homebrew Games in machine code, from Strategy to Shoot-'em-ups, £2.50 Plus disk or £4.50. Send stamped addressed envelope for info. to Kevin Heywood, 18 Sinclair Avenue, Banbury, Oxon OX16 7DW.

Urgent. Have CPC 6128 Plus with colour monitor and multiface two — want to swap for CPC 6128 with multiface two and colour monitor. Phone Roger on 0625 610878 after 6.30pm.

Attention: CPC Guide is a manual describing the firmware, gate array, z80, crtc, etc. Has examples. For more info. write to/send disk to: Kevin Thacker, Fairhaven, Whiteway, Nr Stroud, Glos. GL6 7EP.

FANZINES

New Dimensions — Fanzine of science fiction. Dedicated to Sci-Fi on television and satellite. For first issue send 60p and stamped addressed envelope to New Dimensions, 15 Hinsly Drive, Plas, Goulbourne, Wrexham, Clywd LL13 9QH.

Amszine: A new Amstrad fanzine. Reviewed AA99. Only £1! Issues one and two available now. Phone Johathan on 0663 744863 for details. Holsworthy, Devon.

Continued on page 35 →

Public Image

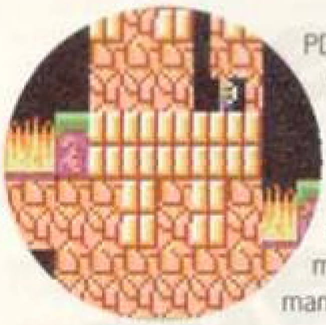
Sorting out the cheap'n'cheerfuls from the cheap'n'nasties, it's out man with his finger on PD pulse, Keith Woods.

Les Mings

By Claude Le Moullec

Notice anything strangely familiar about the title *Les Mings*? No? Well say the two words quickly, in your best Gallic accent. Yes, you've guessed it, what we've got here is a public domain clone of the world's favourite puzzler – *Lemmings*.

You all know what *Lemmings* is about – lots of blue rodents spill out of a door at one side of the screen and march sheep-like straight into the deadly hazards that surround them. It's your job to guide as many of them as possible to an exit before they do themselves any harm; you do this by giving certain lemmings particular tasks to do, such as bridge-building or tunnelling so that you can create a route that avoids the hazards.



So where does this PD version differ from the original? Well first, there aren't as many icons residing at the bottom of the screen, so you can't make your Mings do as many things.



Hang on! This is giving me a sense of deja vu.



Secondly, there's only ever one Ming on screen at any one time. Instead of saving as many Mings as possible, you only have to save one King Ming. All the others are just servants, whose lives are ultimately expendable in the mission to clear the way for the King. It's unfair I know, but, hey, life is unfair. But come the revolution...

Er, anyway, until then, back to the game. *Lemmings* with only one lemming might sound useless but it actually works quite well and, although it means that this game isn't as fast and frantic as the original, its 16 levels are designed well enough to ensure that it's nearly as good a puzzler. On the presentation front this game lacks any kind of intro or decent sound but the graphics throughout are bright and colourful and the Mings are well animated.



Mings are distant cousins to lemmings. They prefer to die in private and give total loyalty to their leader.

Overall it's not a bad effort. It's well up there with the best PD games. Not everybody will like it, but for *Lemmings* fans craving that little bit more, it's an essential game.

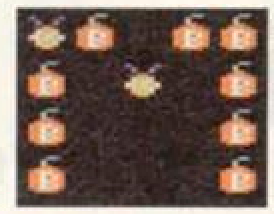
85%

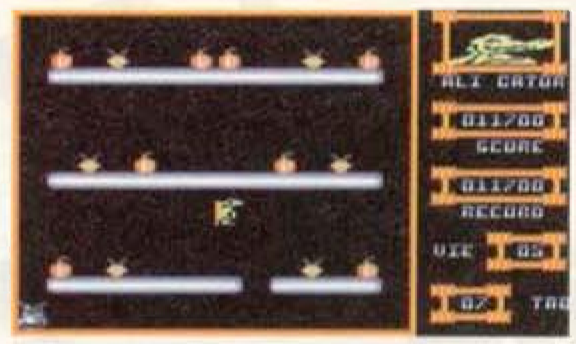
Super Ali

By Claude Le Moullec

This Claude fellow, it seems, likes nothing better than ripping off other people's game ideas. And why not? This time he turns his cloning hand to that old favourite, *Bombjack*.

If you don't already know, *Bombjack* is a game involving a little caped fellow called Jack, who flies around a screen collecting bombs. *Super Ali* features an alligator called Ali Cator (groan!) who's got a rocket strapped to his back and who does pretty much the same thing. Unfortunately, Ali lacks Jack's versatility in





What's going on this month? A PD version of the Rory Bremner show? Here we have yet another classic impersonation.



the air and only ever has one nasty chasing after him. Also unlike Jack, he doesn't get large bonuses for collecting his bombs in a particular order.

The result of all these deficiencies is that the wonderful gameplay which made the original so much fun just isn't there. When you add basic graphics and irritating sound you know you've got the kind of turkey that'd keep a family of four going from Christmas Day to Easter.

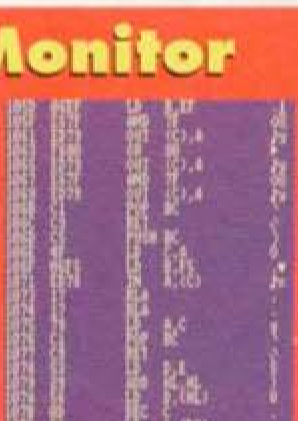
40%

Super Monitor

By Crown of Beng!

Super Monitor is a handy utility from Crown for playing about with other people's code.

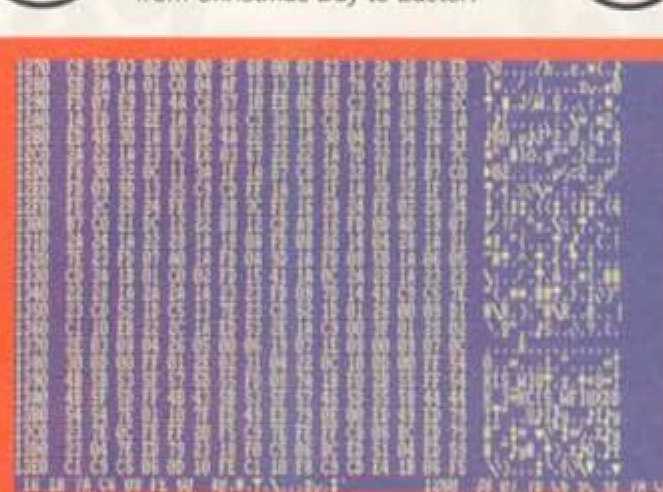
Once you've loaded in your little piece of code, you've got no less than 40 different commands to help you mess about with it. Yes, you read correctly, that's four-oh! Included in these are disassemble, memory map and dump, compare memory, find, examine memory for sountrakker modules, type to memory and zap (fill) memory. In short, there's just about everything you could think of, and your newly-edited code can easily be saved off once you've finished.



Let's face it. Grabs of serious PD are always pretty dull.

All operations are quickly carried out. The whole thing is user-friendly, and includes a full command summary. It is just the thing for scrutinising other people's work.

90%



Basically, if you can make sense of this lot, then you're probably the sort of person who'd find Super Monitor a dead useful utility to have around.

Alien Attack

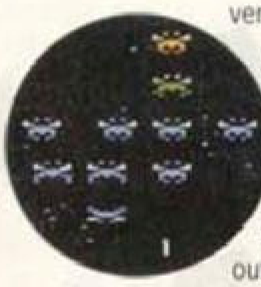
By Mr X



This seems to be turning into the clone wars.

Those blasted aliens are at it again — invading Earth that is. Don't they ever learn? Apparently not. This time they're back in force and they won't take no for an answer.

This month's third clone is yet another version of the classic *Space Invaders*. It is your job to blast the attacking aliens off of the screen and dodge their shots. At the same time, watch out for the aliens that swoop down out of the pack.



What makes this PD version of the game interesting is that it uses an extra-long screen. This makes things quite frantic and the game more playable than any other version. It has lots of smooth, fast, colourful sprites. Although it is slightly repetitive, it gets harder as you go on. Your highest score is permanently recorded, so long-term interest is guaranteed.

Without a doubt this is the best *Space Invaders* clone to grace the PD scene. It may be simple, but it's one of the most playable games you'll come across.

84%

Plus!

By Blue Impuls

Hands up all Plus owners who have ever wished they could use the extra colours of the Plus machines in their own programs. Hmmm, that seems to be just about everybody with a Plus. Well, it's quite simple to do from BASIC or machine code, and this utility makes it even easier.

There are two parts to this program. First there's the colour changer. This enables you to load in a standard 17k screen file in any mode, and change the colours using the Plus' 4096 colour palette. This is done by choosing an ink and giving it three values between 0 and 15, for red, green and blue. By mixing these values you can choose any of the 4096 colours.

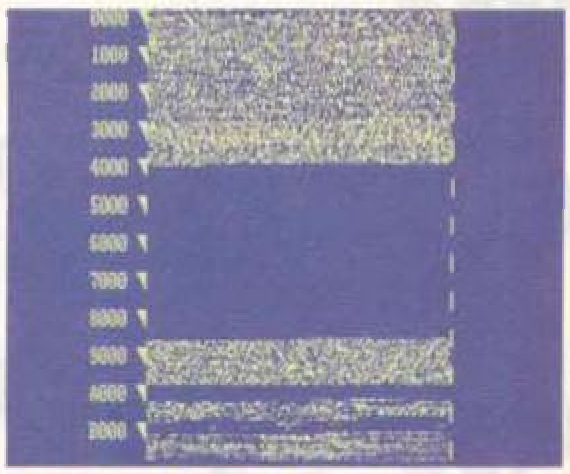
When you have chosen your colours, hit copy and your screen is saved. It can then easily be loaded outside the environment of the utility complete with its brand spanking new Plus colours. All of which means that if you've already got a utility like *Advanced Art Studio* and you don't want to splash out on the excellent *SmArt+*, then *Plus!* is a useful alternative.

The other part of this utility features a sprite editor for editing the Plus' hardware sprites. The sprites are edited on a 16X16 grid, which you move across using your paddle. Again, all 4096 colours can be used. In addition, the sprites, being independent of any screen mode, can be viewed in any of their possible shapes and sizes. A blank screen can be called up in which you can place your sprites side by side to see how they look. This is very useful if you want to build up a larger sprite by sticking a few together. Once you've finished, the sprites can be saved off for use outside the program.

There are drawbacks. One major omission from this program is the instructions. Not a problem when it comes to the colour selector, but the sprite editor will take some time to figure out. Also, it doesn't tell you how to use what you've saved outside the program, so you'll need to examine the files for loading, call addresses, etc. The other drawback is that the sprite editor is slow and tiresome to use. You'll probably find yourself getting fed up with it.

Overall, then, *Plus!* is not a bad program, but there is definitely some room for improvement.

78%



This is what a *Super Monitor* grab looks like when put through the colour changer in *Plus!* Er, perhaps we should have used something a bit more colourful...

Clone on...

Fed up with game clones? Well it's tough if you are because next month I'll be looking at some PD *Pipemania* clones. I'll also be continuing and concluding my look at PD Plus utilities with a review of the latest version of Logon's *B-ASIC*. Don't miss it!

Bad Mag II

By Crown of BENG!

Diskzines, or rather fanzines on disk, are very popular with the European CPC scene. They outnumber paper fanzines and have often been criticised as being little more than fancy demos with some text thrown in.

The Bad Mag is different. There are no fancy space-filling intros in this 'zine – just 68 lengthy articles. That doesn't mean that it's badly coded. Crown has made the best use of his coding skill to produce the best-looking, and most user-friendly, fanzine ever.



A european diskzine – but don't panic, a good half of it is written in in English.

The whole thing is in overscan (no border) and most of the screen is filled with text. There is a small heading at the top, and a small control bar at the bottom.

Control is simplicity itself. Text can be scrolled from right to left, column by column, using a joystick or keys. When you've finished reading hit the spacebar to bring back the menu. Then you can choose your next article. Any time you can't figure out what to do hit escape and a handy help file will appear.

As for the all-important content, anything goes. It might be a CPC fanzine, but it includes a large number of non-CPC articles. They range from a review of *Super Cauldron*, to How to Make Love in a Car (by Lovebyte of the HJT of course!). Most of the articles are well written and highly amusing. Being a German diskzine, many of them are in German, but more than half are in English so you can't complain.

In short, the *Bad Mag* represents exactly what a diskzine should be. It gives clever coding a practical purpose and is an extremely enjoyable read. No other diskzine comes close to matching it.

95%

Available now from all good public domain libraries...

So where do you get all this lovely software from? The answer, my friend, is, strangely enough, not blowing in the wind. In fact, you'll find it on page nine of this very issue, in the Amscene Directory under PD libraries. PD, you see, is not commercial software, it's not copyrighted and, in theory at least, it is free.

What this means is that if you know someone who's got a PD program you want, it is perfectly legal to copy it. If, however, you want to get hold of a specific program and you don't know anyone who's got it, that's when you turn to PD libraries. They have tons of the stuff available which you can order by post or over the phone, but they will ask you to pay some (usually pretty small) amount to cover postage and packaging. In some cases they may also ask you to send along your own disk or cassette for them to copy the programs on to.

So check out the directory, get phoning around and find the libraries that suit your needs.

Production design: Andy Ounsted (AA), Ken Adams (Addams Family Values)

Type-ins

So what do you get if you type in the listings Simon has compiled for you this month? A few hundred pounds, a few dead parrots and some black and white pictures.

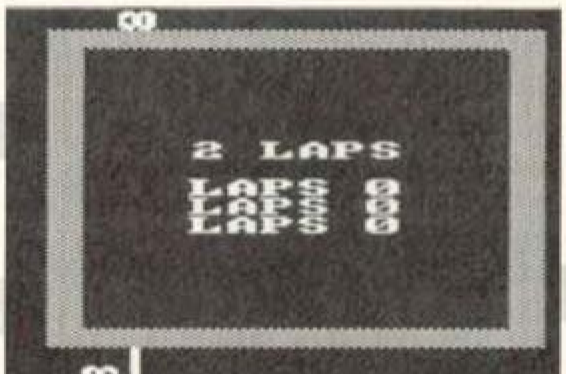
Mini-Cars

First off this month is an odd little game, in which you get to bet on car races. You start off with £100 (told you so) and chose how much to bet, before selecting a car (using the 1, 2 or 3 buttons), and watching it race round a track. Thanks to Reginald Hotchkiss and Sheridan Wheeldon (readers who just give initials for their first names now receive the honour of having a new title picked for them).



Car – it has round wheels that roll.

```
DAOD 10·LET·MON=100
HACO 20·INK·0,0:INK·1,26:INK·2,6:INK·3,24
MDFM 30·PAPER·0:PEN·1:MODE·1:LOCATE·13,5:PRIN
     T·"MINI·CAR·RACER":PEN·2:LOCATE·10,9:PRI
     NT·"Design·by·S.Wheeldon":PEN·3::LOCATE·
     9,10:PRINT·"Program·by·R.Hotchkiss":PEN·
     1:LOCATE·3,16:PRINT·"Designed·&·Written·
     for·AA·A·readers"
JAMP 40·PEN·3:LOCATE·17,21:PRINT·"Have·fun!"
CBEP 50·PEN·1:LOCATE·5,24:PRINT·"(ENTER)·OR·(
     RETURN)·TO·CONTINUE":PEN·0:INPUT·A$
DAKG 60·PAPER·0:CLS
BALG 70·REM
HANF 80·REM·mini-car·racer(C)
KAAD 90·LET·alap=0:LET·blap=0:LET·clap=0
BAFJ 100·REM
BAGJ 110·REM
IADO 120·REM·Design·by·S.Wheeldon
JALN 130·REM·Program·by·R.Hotchkiss
BAJJ 140·REM
IALN 150·REM·symbol·set·up·(cars)
BALJ 160·REM
FAEM 170·REM·CAR·GOING·RIGHT
EBFG 180·SYMBOL·242,&X1100110,&X11111111,&X11
     011011,&X11011001,&X11011001,&X11011011,
     &X11111111,&X1100110
FADH 190·REM·CAR·GOING·LEFT
EBPF 200·SYMBOL·243,&X1100110,&X11111111,&X11
     011011,&X10011011,&X10011011,&X11011011,
     &X11111111,&X1100110
EAGO 210·REM·CAR·GOING·UP
EBCA 220·SYMBOL·244,&X1111110,&X11100111,&X11
     000011,&X1111110,&X1111110,&X11000011,&X
     11111111,&X1111110
FALH 230·REM·CAR·GOING·DOWN
EBFA 240·SYMBOL·245,&X1111110,&X11111111,&X11
     000011,&X1111110,&X1111110,&X11000011,&X
     11100111,&X1111110
OBJF 250·PAPER·0:CLS:MODE·1:LOCATE·4,5:PEN·2:
     PRINT·"ENTER·AMOUNT·TO·BET":LOCATE·4,6:P
     RINT·"YOU·HAVE·£";MON;"LEFT":INPUT·BET2
GALP 260·IF·BET2>MON·THEN·GOTO·250
GANN 270·IF·bet2<=0·THEN·GOTO·250
LAAK 280·CLS:LOCATE·12,7:INPUT·"HOW·MANY·LAPS
     ";SLAP
GAJG 290·IF·SLAP=0·THEN·GOTO·280
CAIC 300·MODE·0
KAHA 310·PEN·1:LOCATE·2,3:PRINT·"KEYS·1,·2·AN
     D·3"
KAGP 320·PEN·2:LOCATE·2,4:PRINT·"TO·CHOOSE·CA
     R·TO"
LAIE 330·PEN·3:LOCATE·2,5:PRINT·"PLACE·YOUR·B
     ET·ON"
LAOH 340·LOCATE·2,6:PEN·1:PRINT·"SPACEBAR·CON
     FIRMS"
ABFO 350·LOCATE·5,12:PEN·1:PRINT·CHR$(242);"·
     ";CHR$(243);"·";CHR$(244);"·";CHR$(245)
CACA 360·BET=1
DAIA 370·I$=INKEY$
CCFH 380·IF·I$="1"·THEN·LOCATE·5,12:PEN·1:PRI
     NT·CHR$(242);"·";CHR$(243);"·";CHR$(244)
     ;"·";CHR$(245):LOCATE·5,14:PRINT·"······
     ·":LOCATE·5,16:PRINT·"·······":LET·BET=1
BCEH 390·IF·I$="2"·THEN·LOCATE·5,12:PRINT·"··
     ·····":LOCATE·5,14:PEN·2:PRINT·CHR$(242)
     ;"·";CHR$(243);"·";CHR$(244);"·";CHR$(24
     5):LOCATE·5,16:PRINT·"·······":BET=2
BCPG 400·IF·I$="3"·THEN·LOCATE·5,12:PRINT·"··
     ·····":LOCATE·5,14:PRINT·"·······":LOCAT
     E·5,16:PEN·3:PRINT·CHR$(242);"·";CHR$(24
     3);"·";CHR$(244);"·";CHR$(245):BET=3
FABN 410·IF·I$="·"·THEN·GOTO·430
CAJK 420·GOTO·370
BAJJ 430·CLS
GAFG 440·IF·BET=1·THEN·BORDER·26
GAFD 450·IF·BET=2·THEN·BORDER·6
GAHG 460·IF·BET=3·THEN·BORDER·24
BAPJ 470·REM
FAGA 480·REM·SET·UP·TRACK
CACD 490·MODE·0
OACF 500·FOR·L=4·TO·17:LOCATE·L,5:PEN·BET:PRI
     NT·CHR$(207):NEXT·L
MAKM 510·FOR·l=5·TO·21:LOCATE·17,l:PRINT·CHR$
     (207):NEXT·l
OAEK 520·FOR·l=17·TO·4·STEP·-1:LOCATE·l,21:PR
     INT·CHR$(207):NEXT·l
OACH 530·FOR·l=21·TO·5·STEP·-1:LOCATE·4,l:PRI
     NT·CHR$(207):NEXT·l
MAGL 540·PEN·BET:LOCATE·7,11:PAPER·0:PRINT·sl
     ap;"LAPS"
JAMP 550·LOCATE·8,13:PEN·1:PRINT·"LAPS";alap
KAAA 560·LOCATE·8,14:PEN·2:PRINT·"LAPS";blap
JAEI 570·LOCATE·8,15:PEN·3:PRINT·"LAPS";CLAP
JAKE 580·LOCATE·6,22:PEN·BET:PRINT·CHR$(149)
JAME 590·LOCATE·6,23:PEN·BET:PRINT·CHR$(149)
JAFE 600·LOCATE·6,24:PEN·BET:PRINT·CHR$(149)
CAPH 610·PAPER·0
EAGP 620·LET·A1=7:LET·A2=22
FAGC 630·LET·B1=12:LET·B2=23
FAPC 640·LET·C1=17:LET·C2=24
BAPO 650·PEN·1
HAGH 660·LOCATE·A1,A2:PRINT·CHR$(242)
BACP 670·PEN·2
HAKH 680·LOCATE·B1,B2:PRINT·CHR$(242)
BAFP 690·PEN·3
HAFH 700·LOCATE·C1,C2:PRINT·CHR$(242)
LABO 710·FOR·L=0·TO·50:SOUND·2,1900,6,15:SOUN
     D·2,1500,0.5,0
CAEG 720·NEXT·L
BAOJ 730·REM
FAII 740·REM·SET·CARS·GOING
BAAK 750·REM
```



Ooh, watch out car. You go fast, and you come from the place where they make cars.

```
FAGK 760·LET·i2=INT(RND*15)+1
LAJI 770·IF·i2=2·OR·i2=3·OR·i2=4·OR·i2=5·THEN
     ·LET·i=1
NAFL 780·IF·i2=6·OR·i2=7·OR·i2=8·OR·i2=9·OR·i
     2=10·THEN·LET·i=2
ABMK 790·IF·i2=11·OR·i2=12·OR·i2=13·OR·i2=14·
     OR·i2=15··OR·i2=16·THEN·LET·i=3
GAGB 800·IF·a1<=0·THEN·LET·a1=1
GAJB 810·IF·b1<=0·THEN·LET·b1=1
GAMB 820·IF·c1<=0·THEN·LET·c1=1
ICLA 830·IF·a1=6·AND·A2>21·THEN·LET·alap=alap
     +1:LOCATE·8,13:PEN·1:PRINT·"LAPS";ALAP:L
     OCATE·A1,A2:PEN·BET:PRINT·CHR$(149):PEN·
     1:LET·A1=A1+1:LOCATE·A1,A2:PRINT·CHR$(24
     2)
GCKP 840·IF·B1=6·AND·B2>21·THEN·LET·BLAP=BLAP
     +1:LOCATE·8,14:PEN·2:PRINT·"LAPS";BLAP:L
     OCATE·B1,B2:PEN·BET:PRINT·CHR$(149):LET·
     B1=B1+1:LOCATE·B1,B2:PEN·2:PRINT·CHR$(24
     2)
HCJA 850·IF·C1=6·AND·C2>21·THEN·LET·CLAP=CLAP
     +1:LOCATE·8,15:PEN·3:PRINT·"LAPS";CLAP:L
     OCATE·C1,C2:PEN·BET:PRINT·CHR$(149):LET·
     C1=C1+1:LOCATE·C1,C2:PEN·3:PRINT·CHR$(24
```

Line 180

The symbol command and the system behind this is a little deep to go into right now, but what you might be interested in is the odd numbering system, with &x11001101 and the like. It's actually very simple, as &x is the prefix you must place on numbers if you want them to be expressed as binary. Try:

```
PRINT &x10101010
```

You should get the grand total of 170 as the result of that little lot. Now try:

```
PRINT BIN$(4)
```

You should see the number 100. What you've actually done is requested the binary version of a decimal 4. To get a proper eight-digit binary number, just use a second parameter to suggest spaces:

```
PRINT BIN$(4,8)
```

Line 760

Random numbers – unfortunately they're impossible to generate, but you can come close. The part we're interested in will be more workable as:

```
PRINT INT(RND*10)
```

But what is this doing? Well, try just:

```
PRINT RND
```

You should get a number somewhere between zero and one. Next, multiply this figure by 10, to achieve a number between zero and ten (obviously):

```
PRINT RND*10
```

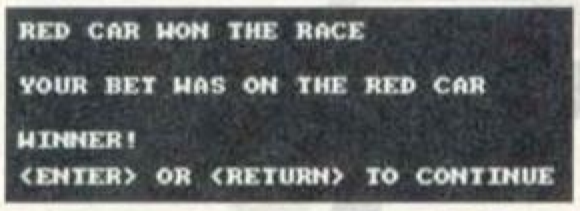
All you have to do now is ask for all the numbers after the decimal point to be lopped (you want to round the number to an integer, maths fans):

```
PRINT INT(RND*10)
```



You can have either car one, car two or car three. One. Two. Three. Three cars.

```
     2)
PAAO 860·IF·ALAP=slap·OR·BLAP=slap·OR·CLAP=sl
     ap·THEN·GOTO·1220
EAPH 870·SOUND·2,1900,1,15
XBGC 880·IF·I=1·AND·A2)21·THEN·LOCATE·A1,A2:P
     EN·1:PRINT·"·":LET·a2=22:LET·A1=A1+1:LOC
     ATE·A1,A2:FRAME:PRINT·CHR$(242)
XBCD 890·IF·I=2·AND·B2)21·THEN·LOCATE·B1,B2:P
     RINT·"·":PEN·2:LET·b2=23:LET·B1=B1+1:LOC
     ATE·B1,B2:FRAME:PRINT·CHR$(242)
XBFD 900·IF·I=3·AND·C2)21·THEN·LOCATE·C1,C2:P
     RINT·"·":LET·c2=24:LET·C1=C1+1:LOCATE·C1
     ,C2:PEN·3:FRAME:PRINT·CHR$(242)
BAOJ 910·REM
JAPM 920·REM·cars·at·top·going·left
BAAK 930·REM
FAGB 940·IF·a1(=0·THEN·a1=1
FAJB 950·IF·b1(=0·THEN·b1=1
FAMB 960·IF·c1(=0·THEN·c1=1
MBKB 970·IF·I=1·AND·A2(5·AND·a1)=1·THEN·LOCAT
     E·A1,A2:PRINT·"·":PEN·1:LET·a2=4:LET·A1=
     A1-1:LOCATE·A1,A2:FRAME:PRINT·CHR$(243)
MBFA 980·IF·I=2·AND·B2(5·AND·b1)=1·THEN·LOCAT
     E·B1,B2:PRINT·"·":PEN·2:LET·B2=3:LET·B1=
     B1-1:LOCATE·B1,B2:FRAME:PRINT·CHR$(243)
FAPB 990·IF·c1(=0·THEN·c1=1
KBNA 1000·IF·I=3·AND·C2(5·AND·c1)=2·THEN·LOCA
     TE·C1,C2:PEN·3:PRINT·"·":LET·C1=C1-1:LOC
     ATE·C1,C2:FRAME:PRINT·CHR$(243)
BAGM 1010·REM
JAMP 1020·REM·cars·at·right·going·up
BAIM 1030·REM
FAOD 1040·IF·a1(=0·THEN·a1=1
FABE 1050·IF·b1(=0·THEN·b1=1
FAEE 1060·IF·c1(=0·THEN·c1=1
IBCO 1070·IF·A1)17·AND·a2)1·THEN·LOCATE·A1,A2
     :PRINT·"·":PEN·1:LET·A2=A2-1:LET·A1=18:L
     OCATE·A1,A2:PRINT·CHR$(244)
IBPO 1080·IF·B1)18·AND·b2)1·THEN·LOCATE·B1,B2
     :PRINT·"·":PEN·2:LET·B2=B2-1:LET·B1=19:L
     OCATE·B1,B2:PRINT·CHR$(244)
IBCP 1090·IF·C1)18·AND·c2)1·THEN·LOCATE·C1,C2
     :PRINT·"·":PEN·3:LET·C2=C2-1:LET·C1=20:L
     OCATE·C1,C2:PRINT·CHR$(244)
BAGM 1100·REM
XAFM 1110·REM·cars·at·left·coming·down
BAIM 1120·REM
LBLE 1130·IF·a1(4·AND·a2(25·THEN·LOCATE·a1,a2
     :PRINT·"·":LET·a1=3:LET·a2=a2+1:LOCATE·a
     1,a2:PEN·1:FRAME:PRINT·CHR$(245)
LBEF 1140·IF·b1(3·AND·b2(25·THEN·LOCATE·b1,b2
     :PRINT·"·":LET·b1=2:LET·b2=b2+1:LOCATE·b
     1,b2:PEN·2:FRAME:PRINT·CHR$(245)
LBNF 1150·IF·c1(2·AND·c2(25·THEN·LOCATE·c1,c2
     :PRINT·"·":LET·c1=1:LET·c2=c2+1:LOCATE·c
     1,c2:PEN·3:FRAME:PRINT·CHR$(245)
CAON 1160·GOTO·760
BANM 1170·REM
EAFL 1180·REM·END·OF·RACE
BAPM 1190·REM
GADJ 1200·CLS:MODE·1:PAPER·0:CLS
CALK 1210·INK·1,26
BAJM 1220·REM
EABL 1230·REM·END·OF·RACE
BALM 1240·REM
GAIJ 1250·CLS:MODE·1:PAPER·0:CLS
BBPF 1260·IF·ALAP=SLAP·THEN·PEN·1:LOCATE·4,5:
     PRINT·"WHITE·CAR·WON·THE·RACE"
ABML 1270·IF·BLAP=SLAP·THEN·PEN·2:LOCATE·4,5:
     PRINT·"RED·CAR·WON·THE·RACE"
BBAM 1280·IF·CLAP=SLAP·THEN·PEN·3:LOCATE·4,5:
     PRINT·"YELLOW·CAR·WON·THE·RACE"
MAMA 1290·PEN·BET:LOCATE·4,8:PRINT·"YOUR·BET·
     WAS·ON·";
JAEL 1300·IF·BET=1·THEN·PRINT·"THE·WHITE·CAR"
JAAB 1310·IF·BET=2·THEN·PRINT·"THE·RED·CAR"
KADB 1320·IF·BET=3·THEN·PRINT·"THE·YELLOW·CAR
     "
```



To bet you need money. *Money.* With money you can buy all sorts of things.

```
DABI 1330·LOCATE·4,11
BBHA 1340·IF·BET=1·AND·ALAP=SLAP·THEN·PRINT·"
     WINNER!":LET·MON=MON+(BET2*2)
BBKA 1350·IF·BET=2·AND·BLAP=SLAP·THEN·PRINT·"
     WINNER!":LET·MON=MON+(BET2*2)
BBNA 1360·IF·BET=3·AND·CLAP=SLAP·THEN·PRINT·"
     WINNER!":LET·MON=MON+(BET2*2)
FBHA 1370·IF·BET=1·AND·ALAP()SLAP·THEN·PRINT·
     "YOU·WASTED·YOUR·£";BET2:LET·MON=MON-BET
     2
EBEI 1380·IF·BET=2·AND·BLAP()SLAP·THEN·PRINT·
     "YOU·LOST·YOUR·£";BET2:LET·MON=MON-BET2
EBIH 1390·IF·BET=3·AND·CLAP()SLAP·THEN·PRINT·
     "YOU·LOSE·YOUR·£";BET2:LET·MON=MON-BET2
DABI 1400·LOCATE·4,13
MBKH 1410·IF·MON(=0·THEN·PRINT·"NO·MONEY·LEFT
     ":LOCATE·1,20:PEN·0:PRINT·"(ENTER)·OR·(R
     ETURN)·TO·CONTINUE":INPUT·A$:RUN
HBPE 1420·IF·MON)0·THEN·PRINT·"(ENTER)·OR·(RE
     TURN)·TO·CONTINUE":LOCATE·1,20:PEN·0:INP
     UT·A$:GOTO·60
```

Line 1040

Just a quick note to let you know that certain things are possible. Look at the following fictional extract:

```
IF a=)16 THEN
```

The =) is to show you that combinations of conditions are possible – you can put a whole lot between IF and THEN:

=	Equals
<	Is smaller than
>	Is bigger than
<=	Is not bigger than
=>	Is not smaller than
<>	Is not

All this, of course, just means you'll be able to cut down on those slow IF... THEN instructions. Hallelujah.

Parrot

Ray Collins is the source of our second game this month. So here's a version of *Simon*, in which you have to follow the sequence of parrots with your joystick – you'll get the hang of it once you get going. Ray claims he can follow up to 15 notes, so can anyone beat that?

```
EANB 10·REM·parrot
ABFD 20·REM·by·ARCsoftware·(c)·april·1993·for
     ·AMSTRAD·ACTION
GANE 30·REM·don't·cheat·!!!!!
BAIG 40·REM
PAAO 1000·MODE·1:INK·0,13:INK·1,0:INK·2,9:INK
     ·3,26:PAPER·0:BORDER·13:PEN·3
BAGM 1010·REM
EAJC 1020·x=RND(-TIME)
DABH 1030·DIM·no(50)
FAAB 1040·SYMBOL·AFTER·199
DAPE 1050·GOSUB·1710
DAAF 1060·GOSUB·2250
DADK 1070·sc=0:hi=0
DAAF 1080·GOSUB·2050
DAHN 1090·FOR·a=1·TO·4
DALE 1100·GOSUB·1530
CADK 1110·NEXT·a
```



Typing listings

If you've never typed in a listing from *AA* before, then reading this following blurb is a REALLY GOOD IDEA.

- Basically, all you need to do is type in exactly what we print EXCEPT the first four letters in each line.
- The first four letters are a code which work in conjunction with our unique and utterly excellent *TypeChecker* program below.
- Only press RETURN when you get to the end of a command line. If a command line goes on to two lines do not press RETURN at the break in the line. Your lines on screen should break in exactly the same place as they do in the mag.

TypeChecker

This is a program that enables you to check whether you have typed *AA* listings in correctly. Type it in, then SAVE it for future use. So, when you want to type in an *AA* listing, and you want to double check that you got it right:

- Load up *TypeChecker*.
- Type NEW.
- Type in the listing of your choice.
- When you've finished type LIST.
- At the end of every line a highlighted code will appear. It should correspond with the code printed in front of the same line in *AA*. If it doesn't you have typed in that line incorrectly.

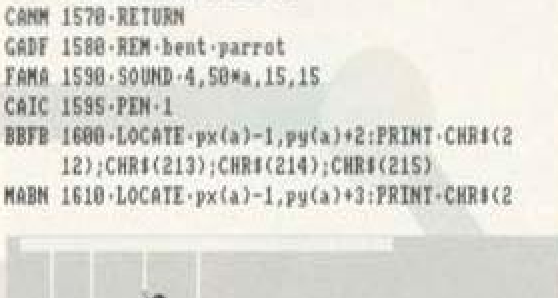
```
PAML 10·'·TypeChecker·V1.0·-·By·Simon·Forrest
     er·-·Dec·1992
MAOJ 20·'·For·Amstrad·Action·-·Public·Domain
DANK 30·MEMORY·&9FFF
CAJK 40·csum=0
GAME 50·FOR·addr=&A000·TO·&A05B
DAKJ 60·READ·byte$
GAJB 70·byte=VAL("&"+byte$)
FACF 80·POKE·addr,byte
GAFB 90·csum=csum+byte
DALK 100·NEXT·addr
OACI 110·IF·csum()&2ADD·THEN·PRINT·"Checksum·
     Error":END
LAHE 115·POKE·&A001,PEEK·(&BB5B):POKE·&A002,P
     EEK·(&BB5C)
KAHI 120·POKE·&BB5A,&C3:POKE·&BB5B,&3:POKE·&B
     B5C,&A0
MACN 130·PRINT·"TypeChecker·V1.0·Installed":E
     ND
MABC 140·DATA·CF,FE,93,FE,0A,CA,00,A0,F5,C5,D
     5,E5,FE,0D,CA,22
LACJ 150·DATA·A0,5F,16,00,2A,5A,A0,19,22,5A,A
     0,E1,D1,C1,F1,C3
LAFJ 160·DATA·00,A0,3E,20,CD,00,A0,3E,18,CD,0
     0,A0,2A,5A,A0,7C
LADI 170·DATA·CD,45,A0,7D,CD,45,A0,3E,18,CD,0
     0,A0,21,00,00,22
LACN 180·DATA·5A,A0,C3,1B,A0,F5,E6,0F,C6,41,C
     D,00,A0,F1,E6,F0
KAJC 190·DATA·1F,1F,1F,1F,C6,41,CD,00,A0,C9,0
     0,00,END
```

Turning *TypeChecker* off (it is automatically initialised when you RUN the program above) and back on again is quite simple:

POKE &BB5B,0	To turn it off
POKE &BB5B,3	To turn it back on again

TypeChecker was an *Amstrad Action* presentation brought to you in association with Hairy Happening Productions Ltd.

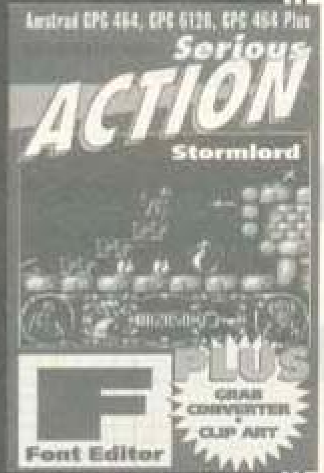
```
CAAD 1120·po=0
FAIG 1130·REM·main·loop
EANO 1140·n=INT(RND(1)*4)+1
DAOD 1150·po=po+1
DAAK 1160·no(po)=n
KANG 1170·GOSUB·2160:LOCATE·20,10:PRINT"MY·TU
     RN"
EADG 1180·FOR·B=1·TO·po
DAAF 1190·GOSUB·2210
CAEK 1200·NEXT·b
GACF 1210·FOR·t=1·TO·500:NEXT·t
BAFL 1220·b=1
LADB 1230·GOSUB·2160:LOCATE·20,10:PRINT"YOUR·
     TURN"
FAMK 1240·IF·JOY(0)=0·THEN·1240
ABJK 1250·IF·JOY(0)=1·THEN·a=1:GOSUB·1650:GOS
     UB·1590:FOR·t=1·TO·100:NEXT·t
ABOK 1270·IF·JOY(0)=2·THEN·a=3:GOSUB·1650:GOS
     UB·1590:FOR·t=1·TO·100:NEXT·t
ABCL 1280·IF·JOY(0)=4·THEN·a=4:GOSUB·1650:GOS
     UB·1590:FOR·t=1·TO·100:NEXT·t
ABFL 1290·IF·JOY(0)=8·THEN·a=2:GOSUB·1650:GOS
     UB·1590:FOR·t=1·TO·100:NEXT·t
DABF 1310·GOSUB·1650
DAPE 1320·GOSUB·1530
IAPC 1330·IF·no(b)=a·THEN·1340·ELSE·1370
NCAI 1340·IF·b=po·THEN·GOSUB·2160:LOCATE·20,1
     0:PRINT"Well·done":LOCATE·20,12:PRINT·po
     ;"·so·far··":LOCATE·30,1:PEN·2:PRINT"SCO
     RE:";PO:IF·PO>HI·THEN·HI=PO:LOCATE·30,3:
     PRINT"HI/SC:";HI
PALB 1350·IF·b=po·THEN·FOR·t=1·TO·1000:NEXT·t
     :GOSUB·2160:GOTO·1140
EABK 1360·b=b+1:GOTO·1240
DAEF 1370·GOSUB·2160
ACEA 1380·LOCATE·20,10:PRINT"Wrong":LOCATE·20
     ,11:PRINT"Sequence":LOCATE·20,13:PRINT"a
     fter·";po-1:LOCATE·20,14:PRINT"moves"
GAHI 1390·FOR·t=1·TO·1000:NEXT·t
DAOE 1400·GOSUB·2160
OAIJ 1410·LOCATE·20,10:PRINT"SEQUENCE":LOCATE
     ·20,12:PRINT"···WAS."
GABE 1420·FOR·T=1·TO·1000:NEXT·T
EABC 1430·FOR·B=1·TO·PO
DAOE 1440·GOSUB·2210
CALI 1450·NEXT·B
DAEF 1460·GOSUB·2160
MANJ 1470·LOCATE·20,10:PRINT"Try·again":x=RND
     (-TIME)
GAHI 1480·FOR·t=1·TO·1000:NEXT·t
DAHF 1490·GOSUB·2160
DADA 1500·GOTO·1120
BAOL 1510·END
FAJI 1520·REM·up·parrot
PAMJ 1530·PEN·1:LOCATE·px(a),py(a):PRINT·CHR$
     (200);CHR$(201);CHR$(202)
OAEJ 1540·LOCATE·px(a),py(a)+1:PRINT·CHR$(203
     );CHR$(204);CHR$(205)
OAPJ 1550·LOCATE·px(a),py(a)+2:PRINT·CHR$(206
     );CHR$(207);CHR$(208)
OAIJ 1560·LOCATE·px(a),py(a)+3:PRINT·CHR$(209
     );CHR$(210);CHR$(211)
CANM 1570·RETURN
GADF 1580·REM·bent·parrot
FAMA 1590·SOUND·4,50*a,15,15
CAIC 1595·PEN·1
BBFB 1600·LOCATE·px(a)-1,py(a)+2:PRINT·CHR$(2
     12);CHR$(213);CHR$(214);CHR$(215)
MABN 1610·LOCATE·px(a)-1,py(a)+3:PRINT·CHR$(2
```



Pretty parrots. Can you see them? They pull the strings. What pattern do they make? Pattern. Parrots. Parrot patterns!

Grab Converter

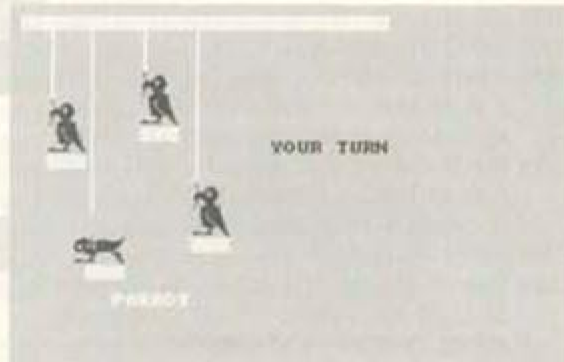
Here it is at last – the mode 0 to mode 2 grab converter that you've all been waiting for (since issue 99, in fact). All you have to do is type it in, giving the filenames of both the multiface grab and the screen file you want to save out, and the program will do the rest, creating a picture in mode 2 that can be loaded into a DTP package or the like – have fun.



It wasn't there. Sorry everyone.

```
DAFK 10·MEMORY·&3FFF
DAPG 20·addr=&BE80
DAHJ 30·READ·byte$
GAAP 40·IF·byte$="**"THEN·GOTO·80
HAMD 50·POKE·addr,VAL("&"+byte$)
EAFF 60·addr=addr+1
CADE 70·GOTO·30
BAOP 80·MODE·1
BABG 90·CAT
FAIM 100·INPUT·"Input·:",i$
FAAI 110·IF·i$=""THEN·GOTO·90
GABD 120·INPUT·"Output:",o$
DAHJ 130·LOAD·i$,&4000
CAPN 140·CALL·&8000
DAHA 150·CALL·&BE80
FACG 160·SAVE·o$,b,&C000,&4000
CAJH 170·GOTO·80
FANI 180·DATA·3E,02,CD,1C,BD,21
FAPF 190·DATA·00,C0,7E,06,00,4F
FANH 200·DATA·E6,AA,FE,00,28,03
FAHH 210·DATA·3E,F0,47,79,E6,55
FALG 220·DATA·FE,00,28,04,78,C6
FAIG 230·DATA·0F,47,78,77,23,7C
FAGJ 240·DATA·B5,FE,00,20,DF,C9
CAFE 250·DATA·**
```

```
     09);CHR$(210)
JAEP 1620·LOCATE·px(a),py(a):PRINT·CHR$(216)
CAKM 1630·RETURN
GAPK 1640·REM·blank·parrot
IAAJ 1650·LOCATE·px(a),py(a):PRINT"···"
IANO 1660·LOCATE·px(a),py(a)+1:PRINT"···"
JANE 1670·LOCATE·px(a)-1,py(a)+2:PRINT"···"
JAPE 1680·LOCATE·px(a)-1,py(a)+3:PRINT"···"
CAAN 1690·RETURN
EAJN 1700·REM·def·char
HAPM 1710·SYMBOL·200,16,16,16,16,0,14,31,63
IALJ 1720·SYMBOL·201,0,0,28,126,127,207,207,2
     07
HALC 1730·SYMBOL·202,0,0,0,0,0,0,128,128
HABL 1740·SYMBOL·203,63,49,40,8,16,33,35,3
JAAL 1750·SYMBOL·204,255,255,254,124,126,255,
     255,255
HAOJ 1760·SYMBOL·205,0,0,0,0,0,128,192,192
GAPG 1770·SYMBOL·206,3,3,3,3,3,1,1,1
JANK 1780·SYMBOL·207,223,191,191,223,223,239,
     247,251
JALK 1790·SYMBOL·208,192,192,224,224,224,240,
     240,248
HAAA 1800·SYMBOL·209,1,0,0,0,56,127,0,0
IAED 1810·SYMBOL·210,253,126,12,24,48,252,0,0
HAEN 1820·SYMBOL·211,248,120,60,28,14,6,3,0
IAMF 1830·SYMBOL·212,7,31,63,127,99,99,127,63
JAIK 1840·SYMBOL·213,144,225,247,251,139,115,
     251,255
JAOE 1850·SYMBOL·214,0,254,255,255,255,255,25
     5,255
JAOA 1860·SYMBOL·215,3,14,252,252,248,240,224
     ,128
IAHB 1870·SYMBOL·216,16,16,16,16,16,16,16,16
JAIC 1880·SYMBOL·217,255,170,85,170,85,170,85
     ,255
CAFM 2030·RETURN
GALN 2040·REM·set·up·screen
MAIO 2050·FOR·y=1·TO·4:LOCATE·10,y:PRINT·CHR$
     (216):NEXT·y
NAMB 2060·FOR·y=1·TO·12:LOCATE·14,y:PRINT·CHR
     $(216):NEXT·y
MAAP 2070·FOR·y=1·TO·14:LOCATE·6,y:PRINT·CHR$
     (216):NEXT·y
MAPL 2080·FOR·y=1·TO·6:LOCATE·3,y:PRINT·CHR$(
     216):NEXT·y
MAAP 2090·FOR·x=1·TO·28:LOCATE·x,1:PRINT·CHR$
     (217):NEXT·x
LACK 2100·LOCATE·10,9:PRINT·CHR$(217);CHR$(21
     7);CHR$(217)
LAGN 2110·LOCATE·14,17:PRINT·CHR$(217);CHR$(2
     17);CHR$(217)
LAKK 2120·LOCATE·6,19:PRINT·CHR$(217);CHR$(21
```



Type-Ins has been a Children's Television Workshop Production © Sesame Street 1994 brought to you by the letters S and F.

```
     7);CHR$(217)
LAAK 2130·LOCATE·3,11:PRINT·CHR$(217);CHR$(21
     7);CHR$(217)
HAJG 2140·LOCATE·8,21:PRINT"PARROT"
DBNI 2145·LOCATE·1,24:PEN·2:PRINT"ARCsoftware
     ·copyright·(c)·1993.·AMSTRAD."
CAIM 2150·RETURN
EAAD 2160·FOR·Y=10·TO·15
IAGM 2170·LOCATE·20,y:PRINT·STRING$(9,32)
CADM 2180·NEXT·y
CAMM 2190·RETURN
IACG 2210·a=no(b):GOSUB·1650:GOSUB·1590
GAAF 2220·FOR·t=1·TO·100:NEXT·t
FACP 2230·GOSUB·1650:GOSUB·1530
CAIM 2240·RETURN
JAIG 2250·px(1)=10:px(2)=14:px(3)=6:px(4)=3
JAEH 2260·py(1)=5:py(2)=13:py(3)=15:py(4)=7
CALM 2270·RETURN
```



Reader Ads

(Continued from page 29)

Imapct issue two is out now and it's free. I'm mad, etc. For a coppy send SSAE to: Impact, 53 High Lane, Burslem, Stoke-on-Trent, Staffordshire ST6 7DF.

PUBLIC DOMAIN

New Tape PD library called 'Tape PD' *(I bet that took a while to think up – Dave)* Write to Tape PD, 39 Woodville, Bickington, Barnstaple, North Devon EX31 2HL.

We need your Public Domain programs for our expanding library and would like to let you know the disk PD News is available now. Send a disk and a stamped addressed envelope to Disk PD, Lower Dexbeer, Dexbeer, Holsworthy, Devon EX22 7LA.

Soft PD library for 20p a section. Send a stamped addressed envelope for a catalogue. For tape only, send your orders to Soft PD, 8 Chalfont Road, St Johns Estate, Colchester, Essex CO4 4NT.

Power PD is the cheapest PD library in Britain. Over 50 selections at 15p. Quality software on disk or tape. Send SAE to: 33 East Lane, Sandiway, Northwich, Cheshire CW8 2QQ.

PD Fun, back and better than ever. 100% fun and now 100% quality (true). All this is now offered on 3.5" disks as well. PD Fun, 41 Michelgate, Kirkby, Lonsdale, Lancs. LA6 2BE.

WANTED

Cartridge games for 464 Plus. Will pay £5 per cartridge — more if boxed. Tel. David on 061 653 0698.

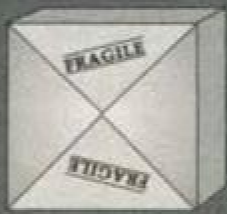
Any disks to fit Amstrad CPC 6128. Mouse also required. Phone Karl on 081 690 7940.

A John Morrison PCB designer cartridge wanted. The full version required with printer routines included it and was marketed in late 1980's. Phone Alan on 061 928 7260 after 6.00pm.

Buying goods through the post

There are loads of great bargains to be found in the ads and classified ads in *Amstrad Action*. But some of you may be a bit reticent about sending money through the post for goods you haven't seen to someone you've only talked to over the phone. But don't panic. Just follow our simple guide to buying goods by post and you can't go wrong.

- **Before ordering anything try to contact the company by phone to check that the product you want is in stock. Write down a list of questions you want to ask them, such as compatibility, price, postage costs, etc.**
- **Check about a delivery date (ask how long it will take before you should receive the goods).**
- **Never send cash through the post. If possible use a credit card because that will probably give you some form of insurance coverage. Failing that, use a PO or cheque.**



- **Beware companies that seem to leave their answer phones permanently switched on or who don't put a phone number or address in their ads.**
- **Keep records of correspondence or phone calls with the company – dates, terms agreed, etc.**
- **If a problem does occur the first place to contact is the company causing the problem. Be calm, and explain clearly what the problem is. Most faults are just mix ups and can be sorted out.**
- **If, however, you still have problems write to *Amstrad Action*'s advertising department at the following address: Alison Winter, *AA* advertising department, Future Publishing, 30 Monmouth Street, Bath, Avon BA1 2BW.**

Fruity Frank, Millionaire and Horsein Around Stables editions wanted. Willing to pay £5 for each. Please write to Andy Hudson, 5 Trocadero Court, Normanton Road, Derby DE1 2GR.

MP3 Modulator/TV Turner for use with 6128 and CTM644 monitor. Phone D Eales on 0203 448946.

Laser Squad disk. If possible with full instructions, cassette considered. Phone Ian on 081 965 9950 after 6pm.

Amstrad 464 Plus operating manual wanted. Teephone Stephen Hay on 03552 44732.

Amstrad CPC6128 disk version of Sim City wanted. Tel: Michael Chivers on 081 994 8924.

Multiface Two for CPC 6128. Will swap any four of the following disks: Equindx, DUN, Darach, Armagedoon, Roland, Strider, BTTF Two, Addams Family. Phone Richard on 010 353 2884037.

Wanted for 6128: Printer, Multiface Two, second disk drive, word processor, DTP packages, plus anything interesting. Tel: Dave Parlett on Coventry 0203 666766.

Wanted 6128 disk drive or 6128 keyboard working but cheap. Ring Keith on Selby 0757 248756.

Ram music machine. Will pay up to £10. Phone Stuart on 0786 475982 after 6pm.

Wanted!Wanted!Wanted! AA1 and AA2 (in readable condition please). Write to Bruno, Postfach 43, 8804 AUSTRIA.

Testers wanted for unpublished programs. Personal copying allowed. All Amstrad CPC's games, serious, utilities etc. First class stamp to Maybrook Software, 95 Humberstone Road, Luton LU4 9SR.

Desperately wanted, any back issues of AA, good price paid, more if with covertape. Contact Fleur Rose (made up name! - Ed), 49 Albury, Southend-on-Sea, Essex SS2 4SL.

Wanted strategy war games CPC good prices paid. Unused Multiface II for sale £20. 36 Mountain View, Baghall Road, Bray, Co. Wicklow, Ireland. Or phone (from UK) 010 3531 2868616.

Prince of Persia and Turrican 2 on disk. Will pay a reasonable price. Tel 0642 825360.

PD adventures for new adventure PD library. Send on tape or disk plus SAE to Moon Shine PD, 19A Kenyon Avenue, rexham, Clwyd LL11 2SP. Help given if writing an adventure.

Amstrad Action, issue 24, September 1987. State your own price. Write to Tony Statton 4 Windway Road, Canton, Cardiff CF5 1AF.

Jack Nicklaus Golf wanted on disk. Phone 0273 376442 after 7pm.

Wanted: Amazing Amstrad Omnibus. 031 551 2305.

SERVICES

Do you have CPM+ on ROM? Have you moved and want to change the details on the ROM? I may be able to help. Phone 0738 29536 after 6pm.

Ink Master 2 home-programmed. Gives 3465 colours on any CPC. Send tape/disk and £2 to: Alan Payne, 89 Wolverhampton Road, Codshall, Wolverhampton.

AA READER ADS

ORDER FORM

SEND TO: SMALL ADS, AMSTRAD ACTION, 30 MONMOUTH STREET, BATH, AVON BA1 2BW

Please place the following advertisement in the next available issue of *Amstrad Action*

Name ______________________

Address ______________________

____

____

FREE READER ADS!

It's true – you can advertise in Amstrad Action for NOTHING! It's all part of our continuing efforts to provide you with the best value magazine possible.

Classification. Tick box: ❑ For Sale ❑ Wanted ❑ Services ❑ User Groups ❑ Other

Write your advertisement here, one word per box. Include your name and phone number if you want them printed.

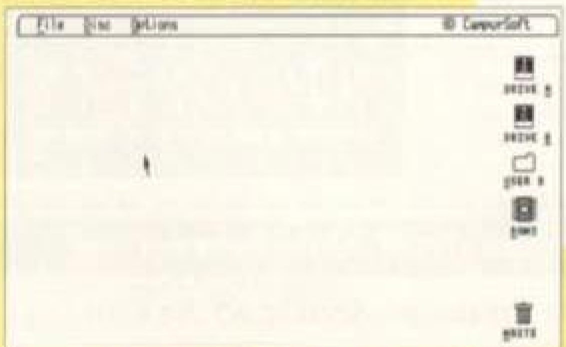
DES

Desktop Environment System

Living in the 90s is all about convenience – TV dinners, remote controls, automatic cars, automatic cat-feeding bowls and delay-action plant food. Now your Amstrad catches up with the convenience age thanks to its very own user-friendly graphical user interface. Clur relaxes into the review...

Imagine yourself stranded on a desert island somewhere in the Pacific, the one and only survivor of the most horrific plane crash known to date. You think you're all alone and start your search for a supply of fresh water. Unbeknown to you thousands of pairs of eyes are watching your every move. They watch you for days as you fail miserably to cope with the unfriendly environment.

Weeks go by until the native pygmies reveal themselves. You're terrified – you think they're going to boil you and have you with mange tout for lunch. How do you communicate? Shout loudly at them in English? Pointless. Spend ages learning their language? A bit time-consuming. Or do you do the sensible thing and draw pictures in the sand to represent the plane, your fellow passengers, your hunger and your lack of hostility? Sounds like your best bet to me.



Plug in *DES*, switch on the CPC and there's your new desktop awaiting instructions.

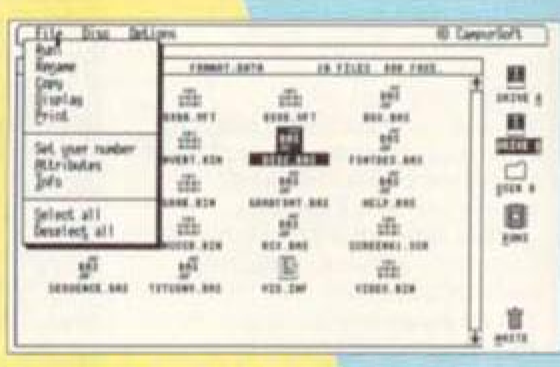
You're in a similar situation with your CPC. How do you get it to follow instructions? It doesn't understand English, and so your only choice is to learn its languages – machine code or BASIC. Or do you? What if you could communicate via some visuals-based system. That's exactly what *DES*, the new WIMP system on ROM (and 3-inch disk) from CampurSoft, is designed to do.

What a WIMP

DES is known as a WIMP system; WIMP is an acronym for Windows, Icons, Menus and Pointers. What this essentially means is that a WIMP is a graphical control system for your computer that is not keyboard command-based, like BASIC, but uses a system of pictures and pull-down menus along with an arrow-shaped pointer to access disks, ROM chips, hard drives, user groups and desktop utilities like file copying and disk formatting.

DES who?

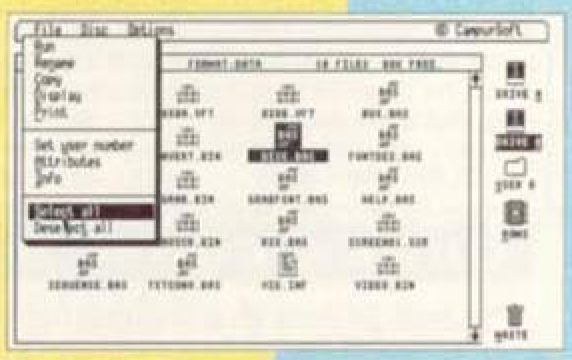
DES brings a comprehensive WIMP system (rarely seen on the 8-bit computers) to your CPC. On start-up *DES* displays a menu bar at the top of the screen and five icons. Two icons look like disks; these represent disk drives. Click on either of these and *DES* will examine the drive to see if there's a disk in it. If there is *DES* will build up a catalogue of the disk and display the files on the disk on screen as a set of icons confined in a box called a window.



Cor, can it really do all that? – a reader
Yep, and loads more besides – Clur.

Another icon is designed to look like a folder; this is the user folder which allows you to access any user destination with ease. The next icon is reminiscent of a chip, this one represents the ROMbox. Open it up and a window will appear on screen listing all the ROM chips you have connected to your machine. Highlight one by moving the pointer over it and hit return to run the program on that chip.

The next icon is the weirdest-looking one, but represents a function you'll probably use quite a bit – it's a dustbin. You see, instead of erasing files from a disk manually in BASIC, all you have to do is highlight the unwanted file's



Each utility is grouped together with similar utilities within a pull-down menu.

Compare and contrast

Desktop systems have been around for a while on business machines and the bigger home computers. How does *DES* on the CPC compare? Let's have a look see at the CPC's bigger brother's GUIs.



Windows, the user-friendly interface that opened up the PC non-computer literate users.



The GEM desktop on the Atari ST – probably the most similar Graphical User Interface to *DES*.



The Mackintosh front end is renowned as one of the most easy-to-use systems.

icon, move the pointer to the dustbin and hit return, then the file will be deleted for good.

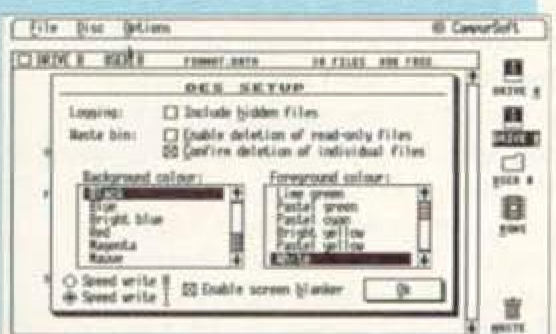
The menu bar has three words written on it: file, disc and options. Move the pointer over one of the words and hit return; what is known as a pull-down menu will appear. These menus contain lists of CPC utilities which you activate by highlighting them with the pointer.

- In the file menu are all the utilities that can be used on individual files – run, rename, copy, select all etc.
- The disc menu contains all those utilities that go to work on discs, doing things like formatting, copying, verifying (checking discs for faults) and archiving discs to tape.
- The final menu contains all sorts of options relating to *DES* itself, the set-up of the program (colours, screen blanker, disc scanner, set-ups, etc) and the exit option to send you out of *DES* and into BASIC.

What does it all mean?

DES comes to you on two ROM chips – there will be a cut-down disc version available by the time this issue hits the streets, but we haven't seen the disc version yet so I can't really comment on it. All you do to access all the goodies *DES* has to offer is plonk the chips in your ROMbox (anywhere, in any order) and away you go.

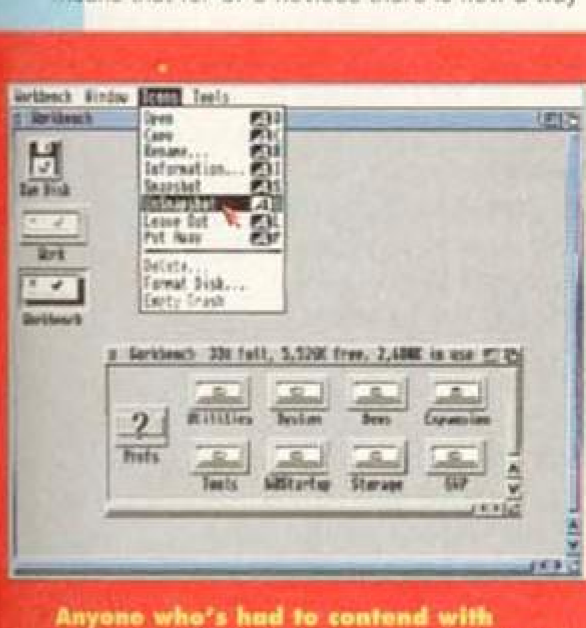
The most noticeable thing about *DES* on ROM is on start-up. After any other ROMs you have



You can configurate *DES* to perfectly suit your own particular computing needs.

installed in your system have been recognised by the CPC, *DES* will boot up automatically with no need for you to manually run the program (you can, if you wish, halt the process by holding down space as you boot up the machine).

The automatic loading and running of *DES* means that for CPC novices there is now a way



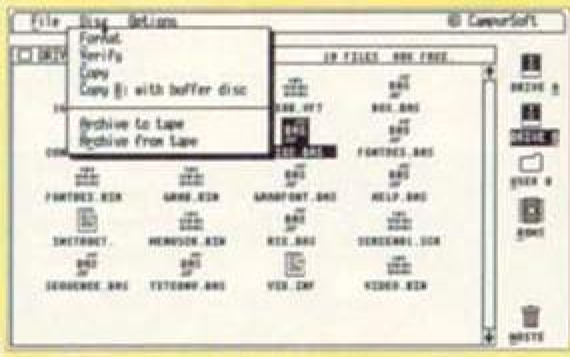
Anyone who's had to contend with Amiga BASIC will know what a Godsend the Amiga Workbench is.

Special offer

We reviewed *DES* on ROM but it is available from CampurSoft on both ROM (£24.99) and disk (£14.99). However as a special offer to *Amstrad Action* readers, if you purchase your copy within a month of the cover date of this issue (within three months of the cover date for our overseas readers) you can have *DES* at the special rate of £19.99 for the ROM and £11.99 for the disk version.

If you're interested in purchasing the programmers' guide, it will be available soon at £2.99 or thereabouts (CampurSoft hadn't decided on an exact price at the time of this issue going to press).

For details, or to place an order, write to CampurSoft, 10 McIntosh Ct, Well Park, Glasgow G31 2HW. Or phone them on 041 554 4735.



DES recognises 3-inch or 3.5-inch disk drives and can format either size disk.

for them explore the CPC without any knowledge of the Amstrad's BASIC commands. You can run programs on disc or ROM, explore discs, edit discs and generally fiddle about with the system.

For experienced users *DES* offers a whole new look to programming for the CPC. For a small fee CampurSoft will supply a programmers' manual to any programmers keen to utilise the *DES* system. This details all the things you'd need to know about the set-up of the code within the chips and a few handy hints and tips too. CampurSoft are keen for people to write programs compatible with *DES* and so will not charge any royalties or put any restrictions on what you want to do with it.

Pals forever

DES is fully compatible with PCW discs; providing you have ROMDOS installed in your system you can perform any of the options in the file and disc menus on PCW 173k and 720k discs (except for formatting). *DES* isn't an emulator; it doesn't enable you to run PCW programs, but does let you transfer data – such as ASCII text files – from the PCW to the CPC.

The only compatibility problem that I have found so far is that used in conjunction with a Multiface, the chips seem to have problems booting up. It doesn't happen every time, but on occasions *DES* will just completely refuse to boot up if a Multiface is plugged into the machine.

Automatic or...?

The manual is extensive and particularly thorough, not that you should have to refer to it too often, hopefully. The program itself is pretty intuitive to use but sometimes you might just need that extra prompting from the manual. If you still have problems with the program there is a back-up service offered by CampurSoft, just in case of those little emergencies.

Apply yourself

At the moment two applications exist that are compatible with the *DES* ROM chips – *Camera* (a screen-grabbing program) and a disc editor compatible with all Amstrad formats, ROMDOS formats and PCW discs too. There will be a disc available soon with these and more utilities on it which will cost around £9 and we will bring you news on that as soon as we have it.

Doesn't it do well?

For the moment all you get when you give over your hard-earned dosh is the standard *DES*, the desktop environment package. What it actually sets out to do it does darn well – I can't fault the utilities and it's pretty speedy. And considering the price of programs on single ROMs, £20 isn't that much to ask for two.

But there's a nagging doubt in the back of my mind – *DES*'s success will depend on the software support it gets from other sections of the CPC scene. If it doesn't get it then it'll remain an interesting experiment with few practical uses; sure you don't have to use long-winded BASIC, but is this a luxury worth paying £20 for? Think about it – where would Windows for the PC be if it wasn't for all the great packages that use the system? Consigned to history probably.

CampurSoft themselves are certainly dedicated to *DES* – all their future releases



Just in case you weren't sure who sells *DES* you can call this window up anytime

(including a graphics program that they're working on but aren't going to tell me much about yet) will be *DES* compatible. If the rest of the industry tries it and likes it as much as we did then we may be looking at the essential piece of CPC hardware that no owner could be without.

It's a bit of a gamble to spend £20 on something that may or may not take off. But if people don't buy it, programmers won't program for it. It's your decision – power to the purchaser!

Details

PRODUCT: DES
PRICE: £24.99 (ROM)/£14.99 disk (but check out the special offer box-out).
AVAILABLE FROM: Campursoft, 10 McIntosh Court, Wellpark, Glasgow, Scotland G31 2HW ☎ 041 554 4735.
RATING: It does what it sets out to do with style, but its success as a WIMP system will be determined by the software that is developed to run with it.

84%

Reaction

Send your letters to: Reaction, Amstrad Action, 30 Monmouth Street, Bath BA1 2BW

Dear AA — A question of sport

Congratulations on producing a great magazine. I just have a few questions to ask you.

1 **Is *Steg The Slug* out on the CPC yet? If it is why haven't you reviewed it yet?**

2 **I was looking through some back issues of *AA* the other day when I noticed a game called *Football Frenzy* in the adventure section. What is it, where can I get it from and is it any good?**

3 **I'm looking for a decent rugby simulator. Can you help?**

4 **Are there any management games lined up for the covertape?**

5 **Can I buy CPC games in HMV megastores?**

6 **Are there any decent rugby management sims available (I already have *Rugby Coach*)?**

7 **Is the *GAC* booklet still available?**

I like Simon's review style. I don't know what F Stewart (*AA92*) was talking about.

David Nicholls, Devon

1 *Steg the Slug* has been out for a while from CodeMasters (☎ 0926 814132). Personally, though, I don't reckon the CPC version is much cop.

2 *Football Frenzy* is, er, a text adventure about, er, football. That's why it was in the adventure section. It used to be sold by Alternative Software (☎ 0977 797777) but unfortunately it's no longer available. You could always try using our Small Ads section.

3 *World Class Rugby* (from Audiogenic ☎ 081 424 2244) is pretty darned funky. Unfortunately, it's no longer available, but there's always our trusty Small Ads section (hang on, I'm getting a sense of deja vu).

4 Not for the next few issues at least.

5 To be frank, there's more chance of Macaulay Culkin winning an Oscar.

6 'Fraid not, though *World Class Rugby* does give you a lot of choice over the players you pick for your team.

7 'Fraid not. The book was a complete sell-out, but strangely never went to a second edition. **Dave**



World Class Rugby – and then there's the England team.

Dear AA — SOSF2

1 **After I heard the news about *Street Fighter 2* not coming out on the Amstrad I immediately rang up US Gold asking about it, and they told me, "There isn't enough demand for the game, so it was scrapped. We will bring it out if there is enough demand – say, for example, if there was a support club formed. The game is sort of on hold. We never finished it and perhaps we will never bring it out because there isn't enough demand."**

So perhaps *AA* could produce a support club for *Street Fighter 2*. I would certainly help and I am sure there are many others who would too. As for not enough demand, I am sure there are about 20,000 readers out there who want it.

2 **Please could you suggest a decent desktop publishing package for my CPC464 as it seems most of them are 128k and disk-only which I haven't got.**

3 **Is a Multiface 2 essential for programming or is it just for messing around with other people's games?**

4 **I am thinking of producing my own fanzine and would review lots of games. The thing is, I don't know how to get pictures from the games. I don't think photography would be much good. Would a Multiface 2 get pictures of games? If it does, how would I get them into the fanzine? There is an Apple Mac at my school with scanners and RM Nimbuses.**

5 **As for Dave working for *GB Action* there was a man with exactly the same name looking suspiciously like Dave doing the maps for games, but also for other mags too. If this is you, Dave, how about doing maps for the *Addams Family* or any other big adventure game?**

6 **Ages ago I bought a really smart game called *Hostages* from Infogrames. Unfortunately it was bug-ridden and that was the last copy in the shop. In fact, it was the only CPC game there. Please could you put this on the covertape because it's getting fairly old now. It came out before *Mystical* and surely you could get it for the covertape. It really is a cool game, great graphics, good levels, good sound and it doesn't take long to load.**

Alastair White, Leicester.

1 No sooner said than done. Turn to page 10 now and get writing.

2 The only one we know of is *PowerPage 64*, available from the reactivated Robot PD – see Amscene on page eight.

3 No to both parts of that question. It's not essential, but it does make life a lot easier for competent programmers as it gives

Short sharp shocks

● I think that Simon Forrester looks like one of those Playdoh mop top sets but more like a mop.
Daniel Thain, Cowley.

Thanks a lot – and you probably wear an anorak. **Simon**

● I took your advice and purchased the book *Making Sense of English In Computers* and good advice it was. Thank you. I know now that a warm boot is not a sweaty wellington.
Ben Anderson, Bilston.

A computer pun that doesn't sound like an out-take from *Carry On Poking* – it can be done. **Dave**

● I've been collecting *AA* since issue 96 and so far I think it's the best mag money can buy. *AA* is simply the best.
Gareth Kneil, Totnes.
PS Can you tell me what game will be on issue 112?

Er, no, but it won't be *Street Fighter 2 Turbo* (that's a joke – look under 'j' in your dictionary). **Dave.**

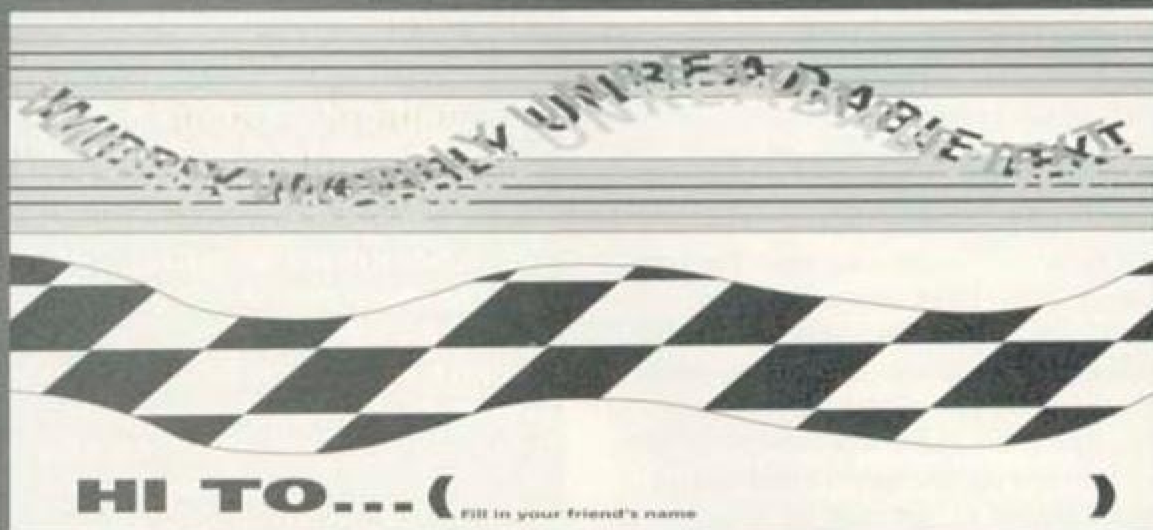
● I've been trying for ages and ages to find a certain game for my 464. It's called *Rodland*. Can you help?
Ann Wandalen, South Harrow.

Rodland is available direct from Kixx ☎ 021 356 3388. **Dave**

On time shocker

1 US Gold's excuse about *Street Fighter 2* wasn't up to much, was it?
2 What about a demo on the covertape? You know, one of those complicated graphics jobbies that the French seem to like producing.
3 Whatever happened to that game that was to be programmed especially for *Amstrad Action* (you know, the one you asked us to send in ideas for)?
4 I subscribe to *AA* and the January issue was only one day late... you caught me off guard there. I wasn't expecting it for another three or four days. You guys must use a random number generator or something to produce the 'Next Issue On Sale' bit of the mag. If so, could you send me a copy, because it seems to work – my *AA* arrives very randomly.
5 What happened to that neat menu system that used to adorn the covertapes and which made tape-to-disk transfers so easy?
6 Finally, *AA*'s still a great mag, but what about a couple of Take That pull-out posters in the next issue? Wouldn't that be nice, eh?
Shane Kelly, Co Derry, Northern Ireland.

1 No.
2 Are you sure? Personally I agree with Rob Buckley's view that he expressed in the interview we printed with him last issue – programmers talented enough to write that sort of stuff really ought to use their skills to produce something a bit more worthwhile than lots of wobbly pictures and shaded balls. But if we suddenly receive a torrent of mail demanding demos on the covertape... well, we're here to serve.
3 Ah, yes, well... and therein lies a tale. Actually, the person who was going to write the game for us became unavailable (yes, that is a euphemism).
4 We use a top secret randomiser element in our production process known only as 'tape duplicators'.
5 Hopefully, if Simon has followed his instructions, the menu system has made a comeback on this issue's covertape.
6 No.



Who needs demos on the covertape? Get out your felt tips, colour in the picture above, fill in the section at the bottom then wave it in front of your eyes – it's the same effect.

them access to and total control over every byte in memory. But it's also great for messing around with games code if you like that sort of thing.
4 Ah, tricky one, this. Yes, you can use a multiface to 'grab' pictures (as we call it in the trade) which you can then import onto a DTPed page. Unfortunately, not all games are multiface-grabbable. The only way you can grab these is by buying another computer and doing all sorts of techy things we really haven't got enough enough room to go into here. Tell you what – I'll mention it to Richard.
5 Let's get this straight. I have never worked for *GB Action*. It's a foul rumour. If someone has been impersonating me then I suggest they seek psychiatric help. But if it's maps you want, maps you shall get. See page 51.
6 Hang on. You want us to put a bug-ridden game on the covertape? Thanks. **Dave**

The bottom line

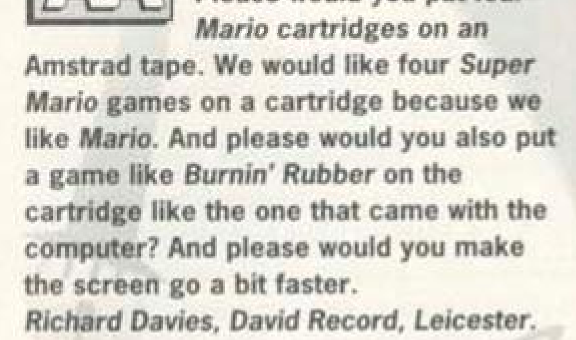
It's that bottom line again:
4 Makes you go insane
6 Make you scream
10 Are the best thing to be invented since covertapes were put on mags
11 On the tape duplicators or the desktop publishing feature?
12 For the wrong kind of snow – what? BR apologising? Whatever next?
14 Don't visit the *AA* office – why?
16 Is non-existent
17 Eh?
18 No more re-runs please
20 Do you use Head and Shoulders? I did but it gave me awful dandruff
21 Isn't good for you
22 A fly as big as a crane? What size? 40ft? 60ft? 90ft? Where?
23 Plenty of them on Sovereign's 384 bus.
30 Really annoys people especially on the 384 (see above).
31 Campaign to stop smokers?
32 Sounds like a character from *Neighbours*.
33 It gets on your nerves doesn't it?
34 The old-fashioned building in London.
35 Had you going there!
36 The Galleria in Hatfield has nine screens – beat that!
37 Answer on page 39
39 Answer to question on page 37
40 Was definitely Biff's brother
41 What, again
42 Eh?
43 Looks terrible
44 No, no. No, no, no, no. No, no, no, no. No, no there's no limit – I hate 2 Unlimited?
46 Another *Neighbours* character
49 *Better The Devil You Know* is my favourite song – NOT!
52 I have enough trouble with the 384, thank you very much.
54 A driving sim?
56 Fine.
Chris Sweeny, Tonwell.
PS Is Rod related to Bill Oddie?
PPS Wass *AA*100 really due out on Thursday 25th December?
PPPS Beadle, Biff, Rod and Bill Oddie all could be related.
PPPPS I hate Commodores and Amigas.
PPPPPS And one last thing – you mag is great, I really enjoy the covertape, etc, etc...

Er, I think you had to be there. **Dave**

If it's not too much to ask...

Please would you put four *Mario* cartridges on an Amstrad tape. We would like four *Super Mario* games on a cartridge because we like *Mario*. And please would you also put a game like *Burnin' Rubber* on the cartridge like the one that came with the computer? And please would you make the screen go a bit faster.
Richard Davies, David Record, Leicester.

Er, no. Next. **Dave**



Not coming soon to a CPC near you... (get the hint?)

New life

Just a tip that other readers might find useful. My first *three-inch drive appeared to* be on its last legs, continually reporting read errors, write errors and an infuriating 'disk not in drive' when there was a definitely was a disk in there. I tried disconnecting all peripherals from the expansion socket and then reconnecting them all again, but this didn't cure

the problem. So I decided that I would have to replace the drive mechanism.

M&B Electrical Supplies (Pilgrim Works, Stairbridge Lane, Bolney, Sussex RH17 5PA) who can be contacted on 0444 881965 are selling replacement drives (or, more correctly, drive mechanisms) for £20 plus £3 postage. Replacement couldn't be easier as it is simply a task of opening your old casing (or if you have a 6128 the computer itself) disconnecting the data cable and power supply connector and removing the earth connector, placing the new drive in the casing and reconnecting all the relevant cables. The connectors are easier to put on than to take off, so be gentle when disconnecting.

After performing this operation it was a real joy to see the drive working. The drive, having a white front, appears to be a replacement for the Plus series, and being a newer design is quieter with an improved loading mechanism. What was an added consolation was that a disk I had never been able to back up, because it failed to read tracks 40 and 41, successfully copied on the new drive.

MJ Siddiq, Walthamstow.

It's refreshing to hear from someone who's had good service from a company. Of course, people are always more likely to write in with complaints, but it's a lot more useful for other readers to hear about the companies that are doing a good job. So let's hear from a few more satisfied customers. **Dave**

Dear AA: Omissions

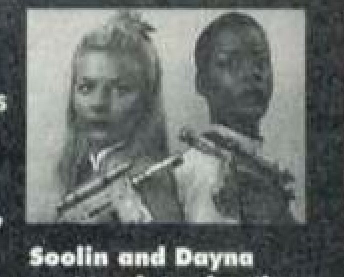
Having just carried my CPC6128 (including the monitor) from Dublin to Bath, I thought it was about time I wrote to you again in an attempt to get into print, now that after two years I finally have an Amstrad in my room again.

I had been buying *AA* from issue 2, but when I left home in 1992 I lost touch, and only returned to the habit with issue 100 (which was ace). I was, though, slightly dismayed at certain absences from the all-time top 100 bit. For a start, what about games like *Sorcery* and *Spindizzy*? Both were superlatively excellent and far better than almost everything else you mentioned in their categories. *Academy* and *Tau Ceti* made no appearances either. Oh well.

There was no favourite TV programme category in your Centenary Survey for *Blake's Seven* to win, either. And the Robins Cinema



Saturday morning kids' club cut of *Dr Who and the Daleks* didn't win a best film of '93 category. Then again, *AA* is a computer magazine so these shortcomings are probably completely justified. Oh, and in my opinion, AA20 with the pale blue CPC464 was the best cover.



Soolin and Dayna contemplate shooting the costume designer.

By the way, can anyone offer any explanation as to why I get no sound out of my 6128 unless I hold down the right arrow key, when it works perfectly? Help!

Well done reaching more issues than *Amtix* and *Computing With The Amstrad* put together and good luck with the next 100. Roll on May 2002.

John 'it's cheaper than Badgerline' (er, we're couldn't read the second name), Bath.

Actually, both *Sorcery* and *Spindizzy* only just missed out on a mention in the feature. This type of Top 100 will always stir up lot of controversy because we don't include everbody's favourites. But now there is a solution – a way you can redress injustices – and you'll find details on page ten. **Dave**

Dear AA: The final frontier

Over the past few months I have read in *AA* the hype for *AA*100 and the game *Elite*. Christmas time to read and play. Centenary survey – favourite game: *Elite*. I await my turn on the trusty CPC6128 while the rest of the family play *Power Tetris*, *Puzznic* and *Eve of Shadows*, all from Sheepsoft PD. More of them later.

First the datacorder stopped working – another day wasted until I get a replacement. New Year's Eve and the 6128 and the datacorder and *Elite* to myself, and then I tried loading it. The first block of Elite.Bin and then the message 'Disk missing - ignore, cancel, retry?' Outcome – *JL Copy*, CAT both sides of the tape and then copy them on to disk only to find that it would run the intro then wanted to load via the tape. No *Elite* and Happy New Year to you, I don't think.

So it was back to reading *AA* and the Centenary Survey. Best PD library – Robot? Is this a joke of yours or what? How could Robot be the best when it has been officially closed for most of the year and unobtainable for the year before that? They have had three of my disks for almost two years now. Phone calls, letters and still no action. I've had the same amount of luck with my subscription to Tim Blackbond's fanzine. Dartsma was a little better but that needed an extra letter and a phone call, and they came third in the poll.

In November 1993 I still wanted *Power Tetris*, *Puzznic* and *Eve of Shadows* and saw the Sheepsoft telephone number published in The Amscene Directory. So I gave them a ring and got dad who was very pleasant and said could I ring back after 10pm when his son would be in. I rang and asked about the games. "Yes, of course – just send your order in and I will put them on to one disk for you."

He did by almost return of post and all for 50p. That has restored my faith in PD libraries and kept my family happy over Christmas. Many thanks again to Sheepsoft.

Now back to best PD library. Sheepsoft second and your footnote – "Probably the most surprising result in the survey." Rubbish. What a silly comment. They are open, fast, user friendly and return disks, which is more than can be said about the one that came first. Sorry, Richard's sister was very pleasant on the phone last year.

I have been reading *AA* since issue 48 and found issue 100 a good read. What a pity about the tape.

Chris Hill, Bradford

Some 6128 owners did have problems loading *Elite*. Sorry about that. But you should have been able to use *JL-Copy* to correct the problem. Ah well, never mind. Simon's other solution in this month's Type-Ins on page 32 is a lot easier.

As for Sheepsoft, in retrospect, yes, my comment did sound a bit derogatory, but I didn't mean it that way at all. I meant it was a pleasant surprise to see them come second. Honest, guv. And I agree that the Robot result was odd, but that was the result of the poll – we didn't make it up.

By the way, Robot is officially open again now, though in a different format. Read about that in Amscene on page eight. **Dave**

Dear AA: Truce

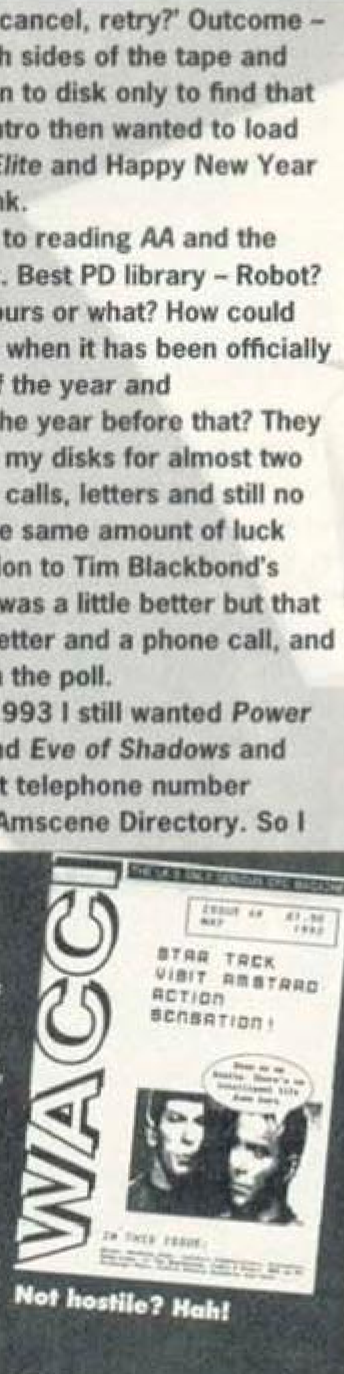
First of all, congratulations at reaching issue 100 of *Amstrad Action* and for bringing out such a good issue to mark the achievement.

Thanks for putting the WACCI half-price special offer for *AA* readers in issue 99. It has brought a good response. It will help the club continue to provide a good standard of service to its members. I shall not enter into the Amscene 'rude comments' debate. I truly believe WACCI is not hostile to *AA*.

Here's wishing you a happy and prosperous CPC new year.

Paul Dwerryhouse, WACCI treasurer.

Ta very much. I always thought the hostilities were just a bit of friendly rivalry anyway. Actually, we were always kinda flattered by the mentions you gave us (like the classic WACCI cover we've reprinted here). And best wishes to you for 1994, too. **Dave**



Not hostile? Hah!

Citizen ABC 24 printer

Finally, a colour printer that challenges the Star LC20 as the best choice for CPC users. Mary Richards checks it out...

If you thought your printer was the bees knees, take a peek at this baby. It's new and it's called the Citizen ABC printer. Citizen, the manufacturer and distributor rolled into one, are aiming it at the home user and small businesses.

It's being marketed by Citizen as the perfect choice for the first-time printer buyer, or anyone wanting to buy a new printer at a reasonable price. It has a two-year guarantee and a seven-year service life.

We thought this sounded like the kind of printer that'd be perfect for loads of CPC users, so, on a rainy Wednesday in January me and hairy took a train from Bath to Picadilly, London, to be wined – on orange juice – and dined – on pizza by Citizen (and you think it's glamourous being a journo). It was an impressive lunch... I mean launch.

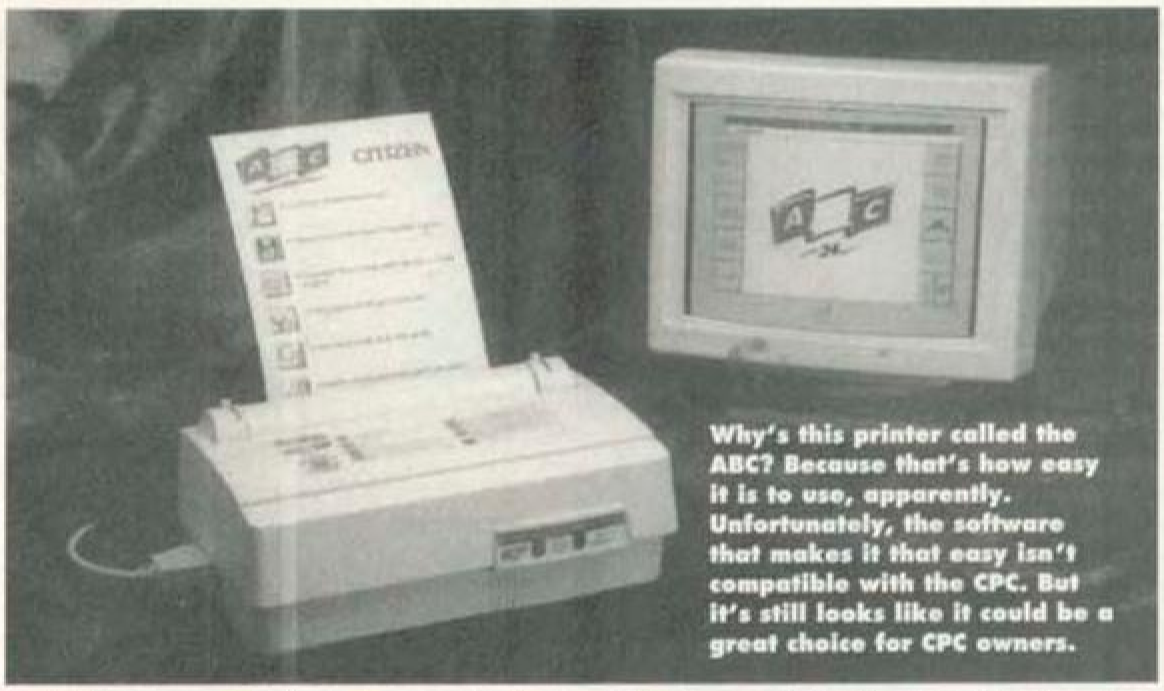
Size isn't everything

The Citizen ABC 24-pin printer (to give it its full name) is a smart-looking chunk of machinery. Compact enough to sit on your desk, at 385mm wide, it will still give you enough room to open *Amstrad Action* next to you as well (per-lease!).

It has 128K RAM and, by inserting a colour ribbon, will print in full colour. The colour option will cost you £24.99 on top of the overall price.

When printing in draft, the ABC can produce 10 characters per inch at the rate of 160 characters every second. Its maximum resolution is a quality 360 dots per inch.

It can only take A4 paper and 50 sheets will fit in its feed slot at a time (though there is a tractor feed kit available for a little extra). It's a quiet little mother – 48 dB(A) – because of its diamond head. This prints different characters in different ways which alters the pitch of sound to make it easier on the ear – allegedly!



Why's this printer called the ABC? Because that's how easy it is to use, apparently. Unfortunately, the software that makes it that easy isn't compatible with the CPC. But it's still looks like it could be a great choice for CPC owners.

Not so easy for the CPC

EasyStart software is included which, unfortunately, is not compatible with CPCs. Come on Citizen – there are loads of CPC dudes out there who use printers who'd lap up something like this. If you were able to access the software you would be given step-by-step instructions on unpacking and setting up the printer. No need to search through a reference manual for 'how to begin' – we've been told you'll be up and running (away) within five minutes. That can't be too difficult to transfer on to then CPC, surely.

And the price for an easy life? Only £189, excluding VAT of course. This, we were told by the men in suits, is what little Jonny will spend on a Saturday shopping spree without a second thought. Little Jonny obviously gets too much pocket money. But, point taken, for a new printer, that's ain't much to pay.

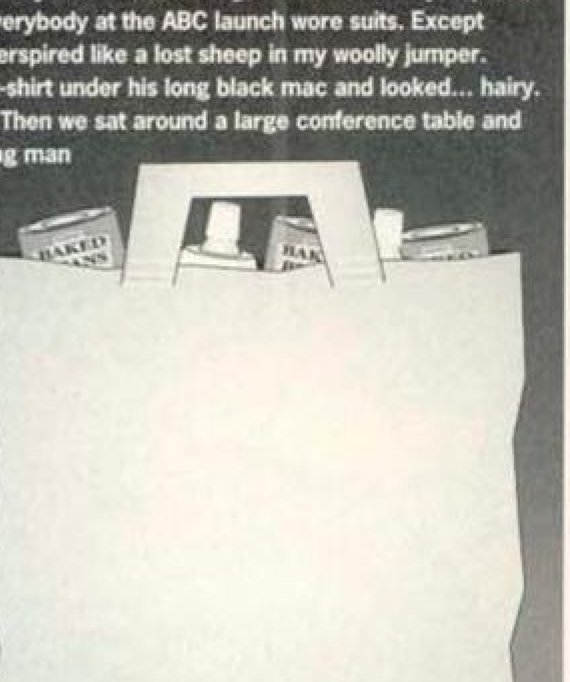
First impressions are good – decent price, decent specs. It's a shame about the *EasyStart* software, but even so the printer still looks promising. We haven't had a chance to check it out thoroughly yet, but expect to see the results of a comprehensive grilling next month, when we'll see whether it topples the Star LC20 from its position as *AA*'s recommended colour printer.

Out to launch

If you think we have an easy life of it, swanning about the country to press launches, think again. Everybody at the ABC launch wore suits. Except Simon and me, that is. I perspired like a lost sheep in my woolly jumper. Hairy sweated in jeans and t-shirt under his long black mac and looked... hairy. We each gulped a cup of rosy. Then we sat around a large conference table and stared at a big screen as a marketing man flicked a switch and went into deep technology.

The room was stuffy, the people were stuffier, the printer loomed up before us and I tried hard to concentrate as Hairy made noises with his placcy bag and scratched his head over the contents.

Ah, haven't I mentioned the placcy bag? The marketing man left a placcy bag of bizarre 'surprises' on each seat. "Hah, freebies! These jounos get all the perks," I bet you're thinking. Well, yeah, but you try and get excited by this lot – one mars bar, one can of Coca Cola, three biros (red, blue and black), one tube of toothpaste, one bar of Imperial Leather soap and one can of baked beans (Heinz of course)? More to the point, what the hell did they have to do with a printer launch? Alphabetti Spaghetti, maybe, but toothpaste? Answers on a postcard please...



Details

PRODUCT: Citizen ABC 24 printer
PRICE: £189 (colour cartridge £24.99)
AVAILABLE FROM: Citizen Europe Limited, PO Box 21, Aylesbury Road, Thame, Oxfordshire OX9 3BR ☎ 0800 525686.

World i

When Dave told Mary she'd be doing a feature on CPCs around the world, Mary's thoughts tur

To many users and readers, the UK is as far as the CPC's following stretches – they're quite happy to hunt round the UK CPC scene, getting a decent standard of software, of course, but having a limited selection to from which to choose. In fact, there's a world of good software out there, and people all over the globe are still quite happily tapping away at their CPCs, churning out high quality software, information-packed fanzines and diskzines and completely pointless demos (sorry).

Ireland

A quick call to our top PD blokey Keith Woods revealed all we needed to know about the Irish scene. Yeah – it's not massive, but it's definitely worth a mention. There are two main PD libraries, Amsof PD and The Vault (both addresses on page nine) which are virtually the UK's gateway to Europe – all the latest European software seems to turn up in these two libraries first. But PD isn't everything (by a very long shot). If you're a more literary person, you might be interested in getting hold of *CPC Forever* (formerly *Amstrad Fun*), the fanzine pulled together by Mr Woods himself which received a fairly good welcome by Dave's fanzine reviews a couple of months back (send £1.50 to 8 Springfield Drive, Templeogue, Dublin 6W, Ireland).

France

This one's a little sad, really – two or three years ago, France had by far the biggest (and, with a little debate, the best) coding team in Europe – Logon system. If I listed all the demos they'd regurgitated we'd be here for years. But they are no longer which is a shame because it looked as if they were on the verge of producing something a little more interesting than a screen full of myopia-inducing patterns. In fact, in their time they did produce the odd utility, but if these people had followed Elmar Krieger's example, you wouldn't need to even think about buying a console machine.

Since Logon's decision to pack their bags, though, the CPC scene in France has fragmented. There are isolated coders dotted around the place, but no major groups. Also, the two major national CPC magazines both recently folded.

But it's not all bad news. There's a company called Jessico which apparently has a number of CPC games on sale that were never officially released in the UK, such as *Space Gun* and *D-Day*. Unfortunately, despite repeated attempts we just can't get through to them (or at least the one time we did there was an insurmountable language barrier). Try your luck on 010 3393 972200.

Germany

Over in Germany there are a few disputes going on (what's new?). In the eyes of many, BENG! (a coding group with a silly name who're based largely in Germany) are the biggest thing on the European CPC scene, but the group is facing a threat – one that's coming from the inside.

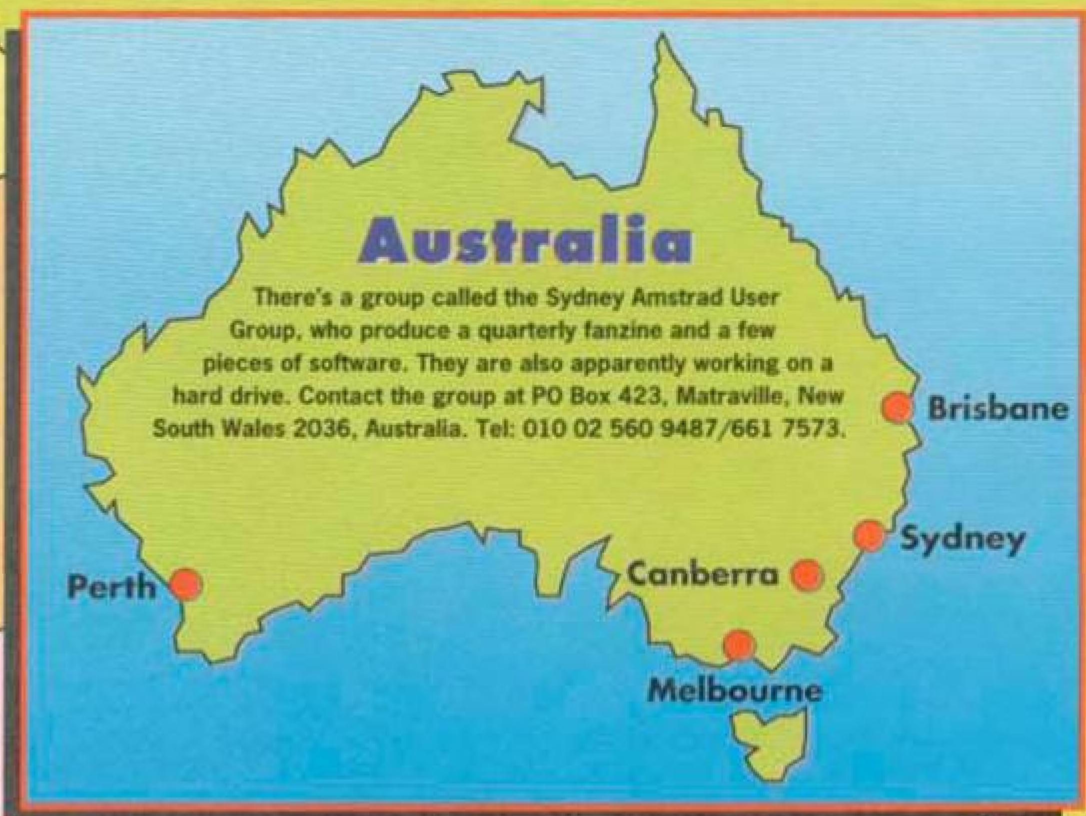
Indeed, Da Silva, the leader of the group, has seen a few troubles recently, with various members (including the infamous Crown, apparently) swapping over to other computers. Da Silva is in the process of re-organising the group. He's on the lookout for new people, and also maintains that given a good coder, the French side of the group could turn out quite a lot of new and interesting things.

On a newer note, Symbiosis, a group formed by two ex-BENG! members, looks to be storming into the lead, popularity wise. The question still remains, though – when are they going to produce something other than demos? Actually, I've spoken too soon, as BENG! are interested in producing games'n'things, so anyone who's interested in joining should write to them, enclosing an international reply coupon, to Da Silver, PO Box 180143, 42060 Wuppertal, Germany.

Demo groups aren't the only thing to come out of Germany, though – *Ründschlag*, the main German fanzine, is doing reasonably well, as is *X-treme*, a diskzine. Unfortunately, they do seem to spend a hell of a long time chatting constantly about how to write demos, who's writing demos and which demos have been written so far, but if you like demos, this could be your bag. *Ründschlag* is available through the coding group HJT, c/o Stephan Kuhs, Münsinger Straße 35, W7424, Heraldstat - 2, Deutschland.

n Action

d to Concord and continental cafés. Simon, used to Dave's cost-cutting, passed her the phone.



Australia

There's a group called the Sydney Amstrad User Group, who produce a quarterly fanzine and a few pieces of software. They are also apparently working on a hard drive. Contact the group at PO Box 423, Matraville, New South Wales 2036, Australia. Tel: 010 02 560 9487/661 7573.

Austria

It's not exactly a country, Austria – more like a state of mind. It's also the home of Elmar Krieger, author of *Prehistorik 2* (the orgasmic stone-age horizontally-scrolling platform extravaganza), *Super Cauldron* (the groovy little witch belting round on her backside), and *Zap'T'Balls*. Hi Elmar. He's also being interviewed next issue (plug, plug).

Greece

Though a great deal of *Amstrad Action* correspondence comes from Greece, the CPC scene is surprisingly quiet over there. They do have a BENG! associate called Rex, but that's not so much a scene as a bloke. And there's a also a group called Olympus which apparently has produced a couple of games, but no-one in the rest of Europe will admit to having seen them.

The saga continues...

Those are the main areas of CPC action we know about, but there are bound to be more. We tend to get loads of letters, for example, from Canada and Denmark, and we know that the Sydney Amstrad User Group has members in New Zealand as well, but we don't know any firm details about the scenes there (if there are any).

And a learned friend who's been to Russia (or whatever it's called this week) reckons there are loads of CPCs owners over there with a severe lack of software (so what's new?). So if any entrepreneurial CPC companies out there are looking for a hungry market, here's your chance.

So if you know about any other pockets of CPC activity around the globe get in touch with us here at *Amstrad Action*, Future Publishing, 30 Monmouth Street, Bath, Avon BA1 2BW and we'll hopefully have a global update in a couple of months.

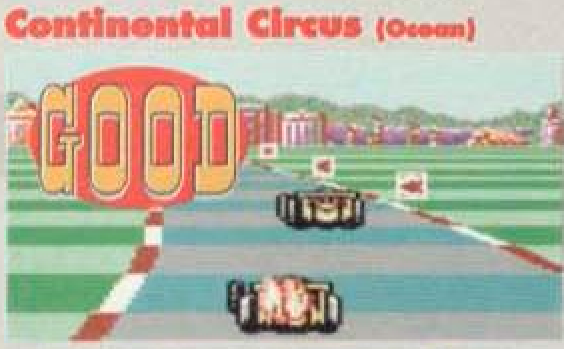
Driving Sims: The Good, the Bad and the Ugly

What separates the Formula One racers from the Skoda simulators? Clur Hodgson strips down the driving sim genrem into its various components parts, and discovers which games achieve high performance results in which areas...

Keeping to the tracks

There are two distinct types of racing game; the ones that take place on specifically-designed racing tracks – 'Grand Prix'-style games – and those in which you drive at illegal speeds down streets, roads and highways. Grand Prix-style games have the more straightforward gameplay because one lap is the same as the next, so you can swiftly learn which bends to look out for. The edge they have over their open road-based rivals is that you're usually racing against other cars, either computer controlled or mate-controlled.

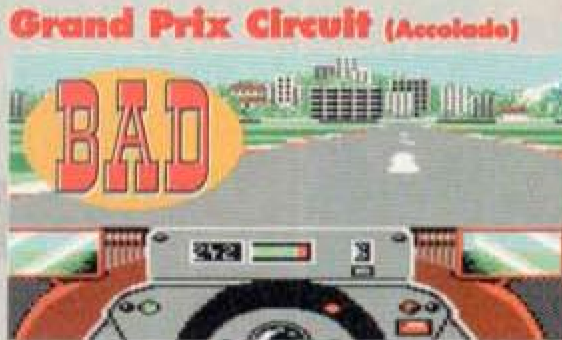
Continental Circus (Ocean)



A stormin' game with opponents that really know what they're doing.

If it's decent tracks you're after, this has got some of the best. There's little you could fault with this game. Unfortunately there's also little chance of finding it in the shops. Your best bet is to scour our Reader Ads section. It's worth the effort.

Grand Prix Circuit (Accolade)



Boring, boring, boring – the main challenge in this game is to keep awake for a lap.

Don't bother wasting your time looking for this. It might be a track-based game but the gameplay is seriously off-track; the courses are so dull they make John Major look exciting. Darn good job you can't buy this one anywhere, really.

Road racing

Ah, life on the open road. If specially-designed tracks are a touch too tame for your liking, then road-based driving games can offer a whole variety of new challenges, from police cars and road barriers, to marauding cattle and landmines – in fact, anything the programmers care to throw at you.

Turbo Outrun (US Gold)



It makes me so sad to see great tracks wasted.

Lots of variety is the key to *TO's* success, with four different cites to race through. Pity, really, that there's not a lot else to say that's nice about it - a definite case of nice tracks shame about the rest of the game.

Test Drive 2 (Accolade)



Dull is not a strong enough word – *Test Drive 2* has a certain soporific effect on gameplayers. The roads are almost dead straight with only the odd bend every mile or so, and the obstacles are about as challenging as *The Sun* Coffee Time Crossword..

Vroom with a view

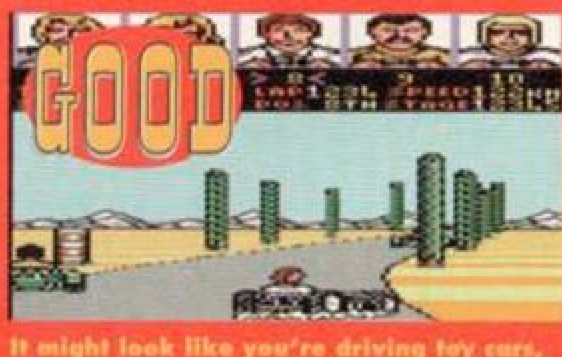
Behind-the-car viewpoint

Watching the action as if you're in a car behind the one you're supposed to be driving, like in *Burnin' Rubber*, might seem a pretty daft idea – after all, where's the logic in that? Where's the realism? It's like you're steering using remote control. But it can be an effective game-style, because, unlike games in which you're in the driving seat, you get a much better all-around view of what's going on, which allows for some spectacular crashes, collisions and skids.



Powerdrift (Activision)

The excellent cornering action in *Powerdrift* demonstrates the advantages of the behind-the-car view. This excellent CPC port is almost identical in feel and style to the classic arcade version of the game – it's that good.



It might look like you're driving toy cars, but the action is satisfyingly realistic.

Cockpit view

A more realistic way of viewing a racing game is to take you right inside the cockpit of the vehicle, so that you feel as if you're actually behind the wheel (or the handle bars as the case may be). But it takes decent game design to inject a feeling of speed and danger when you have such a limited, straight-ahead-only viewpoint. When this type of game is done well, though, the results can be pulse-poundingly effective – games that you can really lose yourself in.

Stuntcar Racer (Kixx)



One of our favourites here in the office, *Stuntcar Racer* is fantasy driving at its best.

It's the view from the cockpit that makes *Stuntcar Racer* such a fine game. It's one of the very few driving games created in the freescape style. The graphics are at first unimpressive but once you get into the flow, the brilliantly-constructed 3D vectors come into their own.

3D Stuntrider (Amsoft)

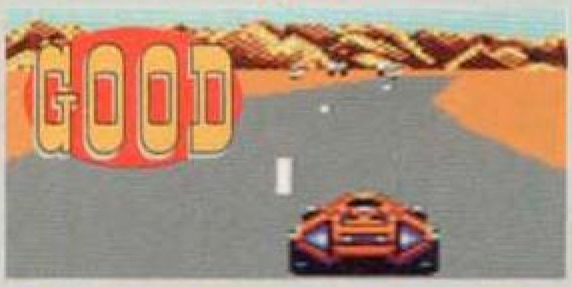
BAD

Okay, the whole point of *Stuntrider* is to pile your bike over the buses laid out in front of you. So when you switch into go-for-it mode the least you expect to see are a few bus-like graphics in the background instead of some pixel-sized dots. This is far too basic for words – thank heavens you can't buy it anymore (except in car boot sales if you're desperate).

Weapons

As if driving at Formula 1 speeds wasn't a difficult enough skill to master some games require you to employ your shoot-'em-up skills as well. And why not? Blasting things to smithereens is a staple diet of video games so this hybrid was a logical evolution. A decent high-speed shoot-up can liven up an otherwise humdrum race.

Fire And Forget 2 (Titus)



You don't need excellent driving skills but you do need a good aim in this game.

Okay, this may seem a bit weird (because it's been slagged off mercilessly in the past) but *Fire and Forget 2* is a perfect game for shoot-'em-up fans who fancy hacking it down a road at 150mph at the same time. The driving skills involved in beating the game are minimal (you can't actually drive off the track no matter how bad you are), but the action keeps you hooked.

Road Blasters (US Gold)

This poor excuse for a game takes drive'n'blast idea and ruins it completely by making both the driving and the blasting far too easy.



Think yourself very lucky if you've never played this.

Manual Gears

What happens if you want more of a driving challenge, but don't like the idea of shooting things out of your way for moral reasons? You have to move on to the more complicated driving techniques. The most logical way to go is to include gear changes in the game play (seeing as that's the most difficult thing to get the hang of when you're learning to drive for real).

Grand Prix Circuit (Accolade)

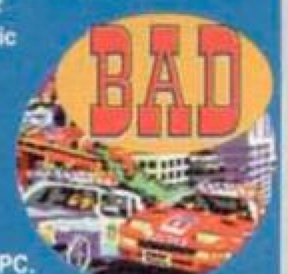
There's not much you can say that's nice about this game, the graphics are poor and the collision detection is appalling. The one thing it does offer is the choice of manual gears or automatic. It may not be much to offer but at least it can act as a leveller if you want to compete against someone who's much better than you at this style of game.



Gears or no gears? The choice is yours – at least *GPC* gets something right.

Cisco Heat (Mirrorsoft)

Yep, there are gears on this one but unfortunately only two – fast and slow. I really don't see the point; it makes *Cisco Heat* seem even more unrealistic than it was in the first place. The moral of this category seems to be that there's still the opening for someone to write a decent driving game with gears for the CPC.



Money

Don't let them fool you, it's got nothing to do with love – it's hard cash that makes the world go round. And it's hard cash that some driving games deal in. Without money you can't update your car, you can't get any money without winning a race and you can't win a race without updating your car. Vicious circle or what?



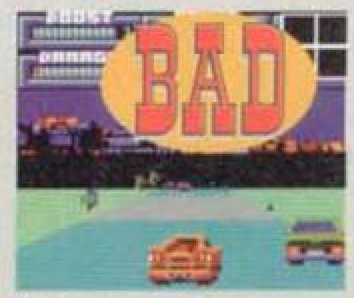
Strangely, this Gerry Anderson *Supercar* has nothing to do with the game.

Supercars (Gremlin)

A superb overhead-scrolling racer which allows you to win cash and spend it on updating your car. No wheeling and dealing, no begging or borrowing, just a simple case of winning a race so that you can update your car and move on to the next level.

Crazy Cars 3 (Titus)

Not the CPC's first or last foray into gambling but why link it with a racing game? It's irritating not getting paid on the strength of your own performance, instead having to rely on your competitors to make sure you're not declared bankrupt by the end of the season.



Not so much crazy as completely brainless.

Cisco Heat (Mirrorsoft)

If you're going to sit behind the car then you should at least have to look at a rear end that isn't offensive to the eye. Plus, the behind-the-car view in *Cisco Heat* only serves to emphasise the appalling scrolling as the car seems to jump along the track rather than slide smoothly down the straights.





The vehicles in *Cisco Heat* steer more like dead haddocks than sports cars. The game should be cooked and served up with garlic.

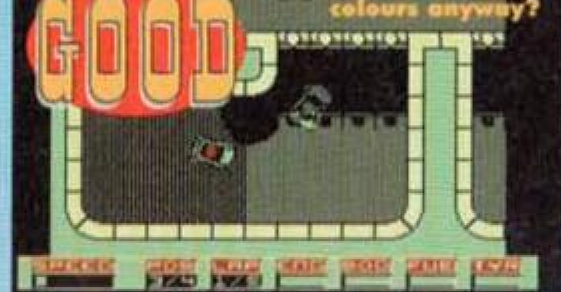
Overhead scrolling

If you're not too fussed about getting a feeling of realism, you could always go for the bird's-eye view. This category can be subdivided into games that show you the whole track on one screen and the ones that display just a portion of the track and scroll around it as the car moves. Generally, the closer you are to the ground, the better the feel you get for the driving because you can see more details on the car and the track. One-screen track games don't tend to score very highly – *Super Sprint* (Electric Dreams) is about the best, and even that is barely road-worthy.

Supercars (Gremlin)

At first glance *Supercars* looks a little limited, but even though it only uses four colours, the graphics are well-designed. The great thing about this game is that you get to build up your car's abilities by buying stuff with the money you win from the races, so the difficulty level adapts suited to your ability as a driver.





Who needs colours anyway?

Championship Sprint (Alternative)



Available on its own or in the *4-Most Super Sports* Compilation (worse luck).

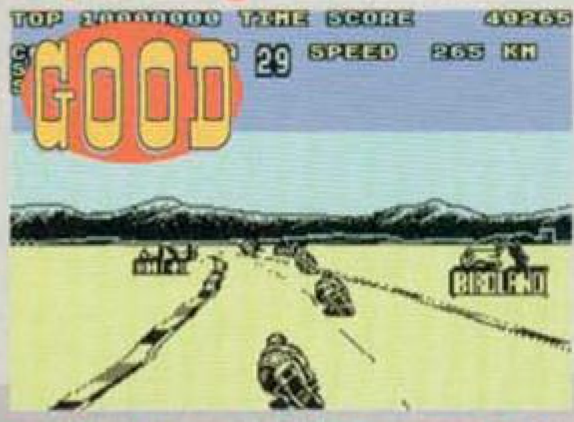
There are tiny cars, there are minuscule cars and then there are the microscopic vehicles racing round the tracks of *Championship Sprint*. They're too small to control effectively and the tracks make the M25 during rush hour look exciting.



Motorbikes

In real life motorbikes handle very differently to cars, and corners are a whole new ball... er, driving game. So a decent motorbike sim should have a different, more frantic, feel from a straight car racing game, otherwise what's the point?

Super Hang On (Electric Dreams)



Don't just dream it, do it. Buy yourself a big fast Harley Davison right now.



An arcade conversion that does its original version justice. There are piles of stages to work your way through and the bikes do a fair enough impression of not handling like two-wheeled cars.

500cc Grand Prix (Acclaim)

BAD

This has to be the first time when a two-player mode hasn't added at all to the playabilty of a game. The graphics are amazingly bad with ugly line drawings of bikes jerking around a badly-drawn background. Steer well clear.

Steering

There's nothing more disappointing than revving up your engine, building up speed, then turning the first corner and finding that your car has the responses of a dead halibut. Get the steering wrong and the whole game's down the pan.

Wec Le Mans (Ocean)

GOOD

No fancy add-ons, no money to earn or spend, no criminals to apprehend, just top class racing action, plain and simple. The car really feels as if it's drifting away from you when you try and take a really sharp corner at too high a speed. Fantastic.



Test Drive 2 (Accolade)

Steering your car in *Test Drive 2* feels like you're driving through a pile of fresh cow dung. Try to follow a slight bend with a delicate twitch on the joystick and you'll find your car horrendously oversteering and ploughing into the nearest hedge.

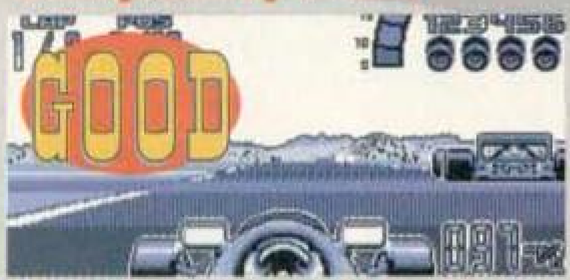


Why, oh why, oh why, when a game is complete and utter pap, do they insist on bringing out an even worse sequel?

Opponents

If there's one thing more irritating than computer-controlled opponents with perfect driving skills it's having a trackfull of really thick drivers who don't know their exhausts from their big ends. It's like any sport really – you need to race against opponents at or just above your skill level.

Nigel Mansell's World Championship (Gremlin)



It's a real pity that Gremlin have stopped selling this – worth scouring Reader Ads for.

This is what we like to see – logical opposition. Most racing games seem to feature opponents who pull away much faster than you ever could and then keep on overtaking you when you're at top speed. There's no way that you could ever accuse our *Nigel* of having opponents like that. Fab stuff.

Championship Sprint (Alternative)

BAD

Talk about tough opponents. In *Championship Sprint* you seem to be playing against zombie drivers in ghost cars; they seem to sail straight through your car with no bother at all. Spooky!

Sound fx

Games designers very rarely use sound effects to their full extent. All we seem to get in driving games on the CPC are tinny crashes and the odd blob of white noise when you're revving up. Driving games need to create the right atmosphere and what better way to do that than with the right fx for the job?

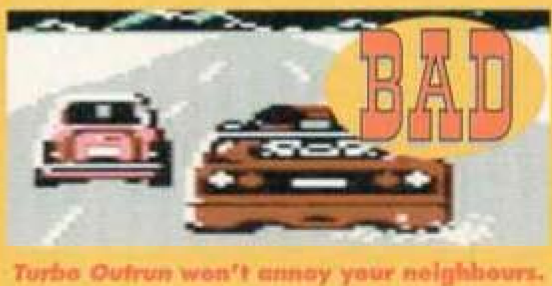
Toyota Celica GT Rally (Gremlin)

GOOD

Vroooooom, vrooooom, eeeeekkkkk, screeeeck, vrooooooooooom. There's nothing like a bit of realistic revving to set you up for a hard day's work. A couple of tracks into it and your neighbours will be on the phone to their estate agent trying to sell because they think someone has built a race track down the end of the street.

Turbo Outrun (US Gold)

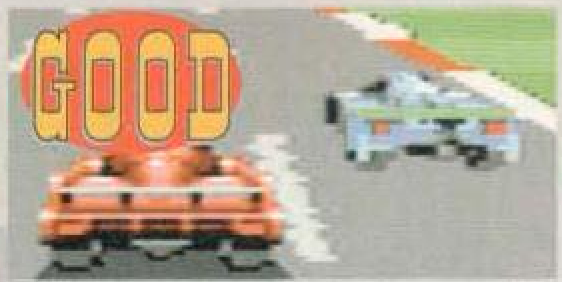
This is a bit of a cheat, really, because the sound effects aren't actually bad, they're simply not there. There are no sound fx at all, just a vile theme tune constantly buzzing in the background.



Turbo Outrun won't annoy your neighbours. (What a great ad sales line – Dave).

Speed

Most driving games are about getting somewhere fast, so you don't want to be stuck in a game where the speedo says that you're cruisin' at 120 mph and it feels like you're hopping forward at about 50 inches per hour.



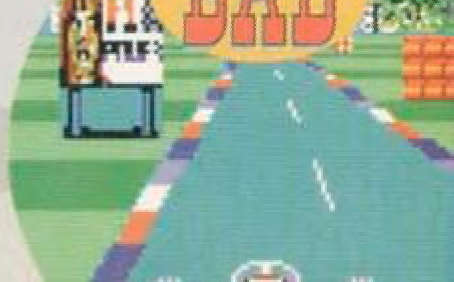
All of you who've got a Plus machine should have this one on cart.

Burnin' Rubber (Ocean)

What it lacks on the playability stakes it makes up for in the speed stakes – not only is the screen update really smooth and fast but you get a real feeling of speed from the game.

Super Monaco GP (US Gold)

Not only is the scrolling slow and jerky but the game lacks any sense of speed in any department. There's a particularly long and tedious qualifying lap.



Background graphics

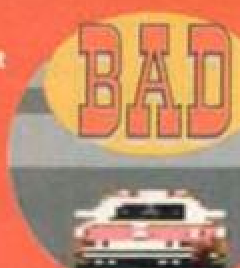
Graphics are one of the most important sections of a game and not purely for aesthetic reasons; if you can't tell the difference between an on-coming cactus and a rival car, the game's not going to be much fun.

Hard Drivin' (Hit Squad)


Great stuff, and out on budget too.

Not the best of the driving games we've looked at but it's certainly the most realistic. It has a freescape design like *Stunt Car Racer's*, but much more detailed. You'll find yourself zooming through lusciously-designed landscapes that'll take your breath away. It has to be one of the most impressive-looking driving games ever to grace an Amstrad's monitor screen.

Cisco Heat (Mirrorsoft)

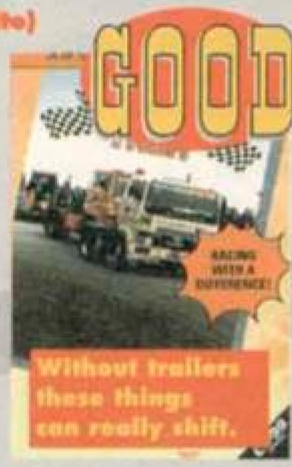


The graphics aren't that hot in general but the backgrounds are particularly poorly designed. The city-scapes are blocky and the perspective is decidedly dodgy.

Car graphics

Let's face it, who really wants to be seen around town in a Skoda? Your cool rating would be in minus numbers if your mates caught you. Driving games are all about fulfilling your fantasies and people don't fantasise about driving around in a sensible Volvo. They do fantasise about owning Ferraris and the like. Would you want to play a game in which you drive a box with wheels?

Supertrux (Elite)



Without trailers these things can really shift.

The game it self is decidedly duff – it plays like a lame dog to put it bluntly. But the well-drawn truck make up in part from the lack of gameplay. It takes up most of the height of the screen and is particularly well-detailed. One for the Yorkie bar-loving, checked shirt-wearers.

4x4 Off Road Racing (Epyx)

Thank your lucky stars that you won't find this one to buy anywhere apart from dodgy dealers in car boot sales. You might as well get out your old tonka toys and race them around the kitchen floor. The car's viewed from behind and consists of a rectangle for the car, a couple more rectangles for the wheels and a yellow circle for the driver's head.

Racing the clock

No one likes to be set an impossible goal. Yes, most people like to be stretched, but set a goal that's just too hard to attain and drivers will soon get bored of trying. If a game you're playing has a set time to beat before you can pass to the next level and you're fall short by a margin measured in geological terms you're going to feel ripped off. Conversely, if the time limit's too easy it's not going to entice you back for another attempt.

Toyota Celica GT Rally (Gremlin)

Okay so this isn't really a racing game, it's more a driving simulator, but that's what makes it great – just driving against the clock. There's far too much to think about let alone having to worry about other competitors ramming you from behind. An archetype of a game.

Super Scramble Simulator (Gremlin)

This game managess to simulate super scrambling about as well as *Neighbours* simulates real life. Far too slow and far too tough, there's no incentive to come back for more. And the time limit is completely unreasonable. Avoid.



Collision detection

Rule number two in any racing game is, 'avoid crashing'. So it gets incredibly frustrating when you're trying your best to steer clear of another car, and although it appears that you've missed it by a narrow, but crucial margin (well, you don't want to waste time by taking a massive detour around your opponents, do you?) the game reckons you've ploughed into them.

Lotus Esprit Turbo Challenge (GBH)

With a car like a Lotus you'd want to be darn careful not to get a scratch on the paint work, so it's a darn good job that *Lotus Esprit Turbo Challenge* has absolutely spot-on collision detection. Otherwise we'd all be weeping at the sight of such a beautiful car being damaged unnecessarily (*you like Lotuses, then? – Ed*).



It may look a bit blue, but you won't be unhappy (groan) with the racing action.

Cisco Heat (Mirrorsoft)

This one really should be in the ugly section the amount of times I've picked it for a bad example of something or other. But somehow it's not quite as bad as the ones that did make it, although it has got collision detection on a par with *Street Rally*. Even though your car appears to be steering well clear of the obstacles and other cars on the track you'll more than likely still incur some damage, no matter how skillful a driver you are.

Two-player

There's a buzz that you get from trashing your mate at a game that you'll never be able to get from beating the computer (and it's a great way of solving long standing arguments too).

Lotus Esprit Turbo Challenge (GBH)

One of the most important things to be able to do in a racing game is to see where you're going – that's why *Lotus Esprit* works so well in two-player mode. The screen is split horizontally which means that each player gets an essential full-width view of the track rather than a pointlessly skinny picture that's half-filled with sky.

Sheer class.



500cc Grand Prix (Acclaim)

This is one of those rare cases in which a simultaneous two-player option doesn't work well. The screen is split vertically for a start and every motorbike that's in the race looks identical. It's tough to tell whether you're chasing your human opponent or a just some computer-controlled bike.

And the ugly...

These games are just too awful to justify giving them loads of space on. That's why they've all been squashed here into one box-out. It's a lot like the government warning they put on cigarettes – these games could seriously damage your health. Commit the following games to memory and then give them a very wide detour at all times:


Street Rally.

- *Badlands* from Domark
- *Stunt Bike Simulator* from Silverbird
- *The Spy Who Loved Me* by The Hit Squad
- *Street Rally* by CPC Now!

Cheat Mode

Is it ethical? Is it moral? Is it a symptom of a decadent society? Is Lee Rouane a threat to civilisation, undermining modern society by encouraging people to cheat? Maybe. Maybe not.

Classic Axiens

Cheat Mode regulars Tony and Donna Parker from Lowedges in Sheffield are set to impress the gaming masses once again with this cheat for *Classic Axiens*. Not only do they provide you with infinite lives (always handy, I find) but, get a load of this, they have also included a routine that enables disk drive owners to transfer the game to disk. Aw shucks, thanks you two, we never knew you cared...

```
LACN 100·'Classic·Axiens·Cheat·&·Transfer
JAGB 110·'Tony·&·Donna·Parker·29/12/93
PABB 120·'Hello·To·The·Man·That·Believes·A·Re
     nault·25
JAHJ 130·'Is·Really·A·Shiny·Ferrari
AAMN 140·'
LACA 150·DATA·3E,01,CD,0E,BC,06,00,0E,00,CD,3
     8,BC,3E,00,06
LAIA 160·DATA·00,0E,00,CD,32,BC,3E,01,06,1A,0
     E,1A,CD,32,BC
KAIO 170·DATA·3E,02,06,0E,0E,0E,CD,32,BC,3E,0
     3,06,17,0E,00
LANC 180·DATA·CD,32,BC,21,B3,99,CD,85,99,21,D
     2,99,CD,85,99
LAAC 190·DATA·21,F9,99,CD,85,99,CD,18,BB,CD,1
     4,BC,21,00,20
KAHM 200·DATA·11,00,53,3E,16,CD,A1,BC,C3,7D,9
     9,11,40,00,21
LAHB 210·DATA·FF,AB,0E,07,CD,CE,BC,06,06,21,1
     E,9A,11,00,20
KAAL 220·DATA·CD,8C,BC,21,00,20,11,00,53,01,0
     0,20,3E,02,CD
```



They've been using this attack formation for years now, and it still doesn't work.

Are you befuddled by listings?

Don't panic if you're new to listings. There's a full explanation of how to type in the darned things and what the four-letter codes at the beginning of each line mean in the Type-Ins section which starts on page 32.

```
LACF 230·DATA·98,BC,CD,8F,BC,3E,A7,32,8D,38,C
     3,00,20,7E,FE
KAIP 240·DATA·00,C8,CD,5A,BB,23,18,F6,CD,14,B
     C,11,40,00,21
LAKB 250·DATA·FF,AB,0E,07,CD,CE,BC,21,1E,9A,1
     1,00,20,06,05
LAIJ 260·DATA·D5,CD,77,BC,E1,CD,83,BC,CD,7A,B
     C,C3,7D,99,1F
KADK 270·DATA·0B,01,0F,02,41,78,69,65,6E,20,4
     3,68,65,61,74
KAMJ 280·DATA·20,26,20,54,72,61,6E,73,66,65,7
     2,0D,0A,0A,00
KACL 290·DATA·1F,06,03,0F,03,41,6C,6C,20,43,6
     F,64,65,20,54
KACN 300·DATA·6F,6E,79,20,41,6E,64,20,44,6F,6
     E,6E,61,20,50
```

Thunderbirds

This has to be the most thorough and comprehensive solution that has ever graced these hallowed pages. Congratulations to Archie Fulton from the windy Shetland Isles for the masses of work that must have gone into this. Well done Archie, have a prize for your efforts. No, go on, I insist

Mission 1: The Mine Rescue

- Select the LAMP and the OILCAN for Alan.
- Select the TORCH and anything else for Brains.

The LAMP and TORCH are for areas without lights; if you don't have them your energy will reduce rapidly.

The first objective is to start the pump. Select Brains. Move him along two screens until you come to a ladder and move up two ladders. Now go right two screens and drop the second item Brains is carrying and pick up the SPANNER. Go left four screens (and watch out for the falling rocks).

You should see a ladder. Move up three ladders then right one screen until you come to the broken lift. Drop the SPANNER next to the lift. Go left one screen and back down three ladders to the bottom. Go left one screen and get the HAMMER. Go back to the broken lift and use the HAMMER twice. Drop the HAMMER, and pick up the SPANNER. Get on the lift.

The lift goes up five screens. The DETONATOR is on the third screen up; leave it there for now. Once the lift stops at the top move right one screen and you should see the broken valve in the middle of the screen; use the SPANNER to repair its. Once Brains has finished go back and collect the DETONATOR. Move up the lift again and go past the valve until you come to a ladder. After the first ladder you should pass the FUSE WIRE (which you will collect later). Move up two more ladders then go left two screens. Go down the ladder and drop the DETONATOR. Go back and collect the FUSE WIRE then go back to the DETONATOR.



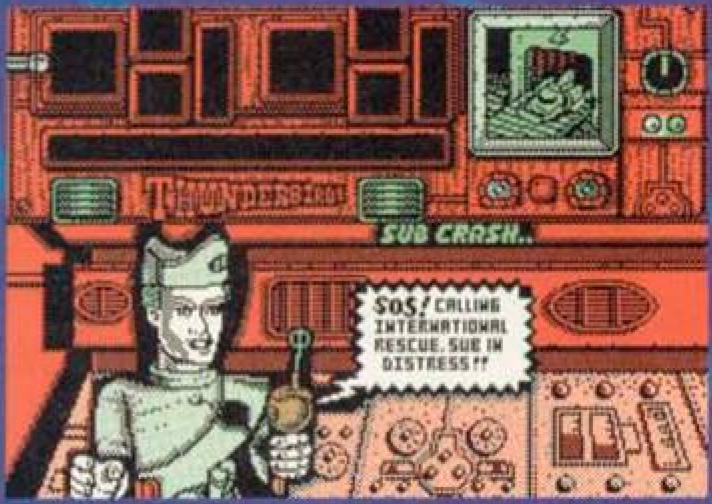
Drop the TORCH and pick up the DETONATOR. Go left one screen. Move towards the dynamite. Brains should automatically move one screen right and blow up the rocks blocking your way. Now move one screen to the left and down one ladder, then go left until you reach the miners.

Select Alan, move down the ladders, go right one screen and drop the OIL CAN. Pick up the LADDER and move right one screen. Move to the middle of the screen and drop the LADDER to cover the hole. Move right one screens and pick up the OILCAN. Move right six screens and down two ladders, then right one screen and down two ladders. Go left one screen and down two ladders. Go left one screen use the OILCAN to free the wheels of the cart. Push the cart until it falls down the mine and blocks the hole. Drop the OILCAN and move right six screens until you find the PNEUMATIC DRILL. Move left nine screens until you come to the lift (beware falling rocks).



Go down the lift and right one screen. Drop the TORCH and go down one ladder. Pick up the AIR HOSE and go back up the ladder. Move right two screens and connect the AIR HOSE to the compressor. Now move to the door and press fire. The PNEUMATIC DRILL should start to break down the door. Move right and you should meet with the miners and Brains. Move Alan on to the cart and a message asking Virgil to lower the grab appears. Brains says he will return to the MOLE. When the cart starts to move up you should return Brains to the MOLE where you'll be given the code for mission two.

Brains has to start the pump as quickly as possible otherwise the mine fills with water.



I reckon that the Thunderbirds revival can be put down to years of conditioning to the wooden acting in *Neighbours*.

Mission 2: The Sub Crash

- Select the AQUALUNG and the RADIATION PILLS for GORDON.
- Select the AQUALUNG and the SHARK REPELLENT for ALAN.

Press fire to make Gordon use the RADIATION



 Best Foreign Film: Like Water For Chocolate, Doom Megalopolis, Neighbours, El Mariachi

```
KAPK 310·DATA·61,72,6B,65,72,0D,0A,0A,00,1F,0
     7,05,0F,01,49
KACL 320·DATA·6E,73,65,72,74,20,41,78,69,65,6
     E,20,41,6E,64
KADJ 330·DATA·20,50,72,65,73,73,20,41,6E,79,2
     0,4B,65,79,07
KAFH 340·DATA·00,61,78,69,65,6E,20,20,20,20,2
     0,D3,52,43,02
CAAL 350·DATA·T&D
EADE 360·chk=0:x=&9900
JAPC 370·READ·a$:IF·a$="T&D"·THEN·400·ELSE·380
GAFD 380·a=VAL("&"+a$):POKE·x,a
HABO 390·x=x+1:chk=chk+a:GOTO·370
HAKG 400·IF·chk()&6651·THEN·GOTO·520
LAML 410·MODE·1:CLS:BORDER·0:INK·0,0:INK·1,24
     ,6:INK·2,19
PABA 420·LOCATE·9,1:PRINT·"Please·Choose·An·O
     ption":PEN·2
LAIG 430·LOCATE·11,4:PRINT"1·*·Tape·Cheat·Onl
     y"·
LAGM 440·LOCATE·11,6:PRINT"2·*·Transfer·To·Di
     sc"
LAJE 450·LOCATE·11,8:PRINT"3·*·Disc·Cheat·Onl
     y"
KAGI 460·PEN·1:LOCATE·9,12:PRINT·"Choice·>·",
     z$
KAPB 470·WHILE·z=0:z$=INKEY$:z=VAL(z$):WEND
FAMI 480·ON·z·GOTO·490,500,510
HAJF 490·CALL·&9900:REM·Tape·Load
JAPH 500·POKE·&9954,&56:POKE·&9955,&99:CALL·&
     9900
JALC 510·CALL·&998F:REM·Disc·Only·Load
LAOB 520·PRINT·"Oh!·Dear,·Typing·Error":END
```

Multiface Poke

388D,A7	Infinite lives

Classic Muncher

Tony and Donna Parker are *BACK* with another listing, this time for *Classic Muncher*. Once again, not only do you get infinite lives, but the game can be transferred to disk as well. Three cheers for the Lowedges posse.

```
MAAA 100··'Muncher·Cheat·&·Transfer·To·Disc
JAAD 110··'Tony·&·Donna·Parker·23/12/93
LAEG 120··'Greetings·To·The·David·Bailey·
NABP 130··'Who's·Really·A·Trainee·Sumo·Wrestl
     er·
OACA 140··'464/+·Owners·Remove·The·|TAPE·in·l
     ine·480···
AANN 150·'
```



Classic muncher or jurassic muncher?

```
LADA 160·DATA·3E,01,CD,0E,BC,06,00,0E,00,CD,3
     8,BC,3E,00,06
LAJA 170·DATA·00,0E,00,CD,32,BC,3E,01,06,1A,0
     E,1A,CD,32,BC
KAJO 180·DATA·3E,02,06,0E,0E,0E,CD,32,BC,3E,0
     3,06,17,0E,00
LAED 190·DATA·CD,32,BC,21,C3,99,CD,95,99,21,E
     4,99,CD,95,99
LABD 200·DATA·21,0B,9A,CD,95,99,CD,18,BB,CD,1
     4,BC,21,32,9A
LAEB 210·DATA·CD,4E,99,3E,01,CD,6B,BC,11,00,0
1,06,07,D5,CD
LAEE 220·DATA·77,BC,E1,CD,83,BC,CD,7A,BC,C3,8
     D,99,11,40,00
LAKA 230·DATA·21,FF,AB,0E,07,CD,CE,BC,06,07,2
     1,32,9A,11,00
KACJ 240·DATA·01,CD,8C,BC,21,00,01,11,00,94,0
     1,03,01,3E,02
LAGF 250·DATA·CD,98,BC,CD,8F,BC,3E,C9,32,E9,0
     9,C3,03,01,7E
LAPB 260·DATA·FE,00,C8,CD,5A,BB,23,18,F6,CD,1
     4,BC,11,00,01
LAIA 270·DATA·21,FF,AB,0E,07,CD,CE,BC,21,32,9
     A,11,00,01,06
```

Poking the multiface way

1 Make sure that you've got a Multiface plugged into the back of your CPC; it helps.
2 Load the game as normal.
3 Press the RED button on the Multiface.
4 Press 'T' for tool.
5 Press '*' to select the code.
6 Press 'H' for HEXADECIMAL input.
7 Press 'SPACE' for input.
8 Type in the ADDRESS (ie, 3A7C)
9 Type in the POKE (ie, A7)
10 Press 'RETURN'
11 If there's more than one POKE go to 7.
12 Press 'ESC' back to the menu.
13 Press 'R' to return to the game.



Did Lady Penelope and Jeff Tracy ever have a fling? If not, who's the Tracy boys' mum?

PILLS, then go to the door and press fire to open it (from now on press fire to open a door unless stated otherwise). Go left and a hatch will open. Go down the hatch then right three screens and pick up RADIATION PILLS. Take them to Alan at Thunderbird Four and drop them. Select Alan and drop the AQUALUNG. Pick up the RADIATION PILLS and press fire to make Alan use them. Pick up the AQUALUNG and go to the hatch. Select Gordon and move left one screen. Go up the ladder and collect the BLUE CARD from the captain. Climb down the ladder, go to the hatch and go down the second ladder. Move right three screens.

Select Alan who should be at the hatch. Go down the ladder, move left three screens and another hatch should open. Climb down the ladder, go left three screens until you come to the room with the torpedo and stand in front of the lever.



Press fire to launch the torpedo. Move right five screens until you reach the screen with the hatch. Before trying to go down the hatch close the door on the left of this screen. Between the doors is a switch; when you press fire this will empty out the water and allow you to go down the ladder. Go right and open three doors. Go back three screens and fall down the hole; this takes you outside the sub.

Once outside the sub select the SHARK REPELLENT and go right one screen. What looks like a small fish will swim towards you. When it touches you it will die. Go right two screens and collect the YELLOW CARD. Move left three screens and re-enter the sub. Go left as far as possible opening the doors as you go. Do not empty the water out yet. Instead, go right until you come to the ladder. Climb up the ladder and go left until you reach the ladder. Climb up the ladder and make your way past Gordon until you reach the hatch. Go down the ladder. Move right until you reach the consoles. Move in front of the console with the Y on it.

Now select Alan and move him down to the console with the B on it and press fire. Select Gordon and press fire. Once the reactor has shut down move Gordon one screen left to the reactor room. Go down through the hatch and then right until you reach the torpedo room. Press fire when you're in front of the lever.

Move both players back to the screen titled 'Bridge'. Select Alan to return to the flooded sections. All the doors should be open. In the middle of the room is another switch – stand in front of it and press fire. This will empty the flooded sections. You are told that the submarine has been refloated and to make your way back to Thunderbird Four. Go there and you will be given the password for the bank job.

Mission 3: The Bank Job



- Select the HAIRSPRAY and the CLOCKWORK MOUSE for Lady Penelope.
- Select the CROWBAR and the STETHESCOPE for Parker.

Use Lady Penelope first. Select the HAIRSPRAY and move left one screen. Approach the guard and use the HAIRSPRAY. Once the guard is asleep, climb the ladder and drop the HAIRSPRAY. Select Parker and move left one screen then up the ladder. Go left two screens and up in the lift. Step out of the lift, go right and stand in front of the first filing cabinet. Swap to Lady P and follow Parker until you're standing in front of the open drawer. You're looking for a KEY – you may have to keep



The game lacks one vital element from the series; stock footage of Thunderbird 2 coming out of its hangar.

The Manic multipoke mania zone

Rustling up this month's batch of POKEs are good old Ken Wood of Blyth and Peter Curgenven of Cornwall. Cheers lads, and as usual, the initials after the name indicate who penned which POKE. If you've found any POKEs you want to share with the world, then jot it down and send to us here at Cheat Mode, Amstrad Action, Future Publishing, 30 Monmouth Street, Bath Avon BA1 2BW, and instant fame and fortune will be yours. Well, fame anyway.

Game	Format	Poke, Address	Effect
Untouchables (KW)	Tape	0FD2,A7	Infinite Time
		4577,A6	Two shots to kill bookkeeper
		4915,00	Infinite bullets (level three)
Turrican 2 (KW)	Tape	9B98,00	Infinite everything (level one)
		C741,00	Infinite everything (level two)
		3C91,00	Infinite everything (level three)
		8835,00	Infinite everything (level four)
		2160,00	Infinite everything (level five)
		3698,00	Infinite everything (level six)
		3618,00	Infinite everything (level seven)
		3952,00	Infinite everything (level eight)
		398E,00	Infinite everything (level nine)
		3D44,00"	Infinite everything (level ten)
		3D93,00	Infinite everything (level eleven)
Crazy Erbert (PC)	Tape	4A18,00	Infinite lives
Dark Star (PC)	Tape	4945,00	Infinite lives
Attack of the Killer Tomatoes (PC)	Tape	3625,00	Infinite lives
Jonny Quest (PC)	Tape	77A7,00) 7782,00)	Infinite energy

```
LALI 280·DATA·07,D5,CD,77,BC,E1,CD,83,BC,CD,7
     A,BC,C3,8D,99
KAHL 290·DATA·1F,09,01,0F,02,4D,75,6E,63,68,6
     5,72,20,43,68
KAAJ 300·DATA·65,61,74,20,26,20,54,72,61,6E,7
     3,66,65,72,0D
KAHL 310·DATA·0A,0A,00,1F,06,03,0F,03,41,6C,6
     C,20,43,6F,64
KAMN 320·DATA·65,20,54,6F,6E,79,20,41,6E,64,2
     0,44,6F,6E,6E
KAJJ 330·DATA·61,20,50,61,72,6B,65,72,0D,0A,0
     A,00,1F,05,05
KAEM 340·DATA·0F,01,49,6E,73,65,72,74,20,4D,7
     5,6E,63,68,65
KAAJ 350·DATA·72,20,41,6E,64,20,50,72,65,73,7
     3,20,41,6E,79
KABK 360·DATA·20,4B,65,79,07,00,6D,75,6E,63,6
     8,65,72,00,00
LADL 370·check=0:FOR·start=&9900·TO·&9A39:REA
     D·a$
OADG 380·a=VAL("&"+a$):POKE·start,a:check=che
     ck+a:NEXT
IAJG 390·IF·check<>&6FDB·THEN·GOTO·510
LALL 400·MODE·1:CLS:BORDER·0:INK·0,0:INK·1,24
     ,6:INK·2,19
PAAA 410·LOCATE·9,1:PRINT·"Please·Choose·An·O
     ption":PEN·2
LAHG 420·LOCATE·11,4:PRINT"1·*·Tape·Cheat·Onl
     y"·
LAFM 430·LOCATE·11,6:PRINT"2·*·Transfer·To·Di
     sc"
LAIE 440·LOCATE·11,8:PRINT"3·*·Disc·Cheat·Onl
     y"
KAFI 450·PEN·1:LOCATE·9,12:PRINT·"Choice·>·",
     z$
KAOB 460·WHILE·z=0:z$=INKEY$:z=VAL(z$):WEND
FABJ 470·ON·z·GOTO·480,490,500
JAID 480·|TAPE:CALL·&9900:REM·Tape·Load
LAKG 490·|TAPE:POKE·&9964,&66:POKE·&9965,&99:
     CALL·&9900
JALC 500·CALL·&999F:REM·Disc·Only·Load
LANB 510·PRINT·"Oh!·Dear,·Typing·Error":END
```

Get into the mode

Stuck on a game? Or have you discovered a cheat or hint that other people should know about? Then write to: Cheat Mode, *Amstrad Action*, Future Publishing, 30 Monmouth Street, Bath, Avon BA1 2BW.

Multiface Poke

09E9,C9	Infinite lives



swapping back to Parker and moving him a cabinet at a time until you find it.

Once you have the KEY take Lady P down in the lift and right one screen. Go down the ladder, then right and move her in front of the lift. Do the same with Parker. Go up in the lift, move Parker to the left of the trolley and use the CROWBAR to start the trolley moving. Push it to the lift and go up to level four. Use Parker, drop the CROWBAR and move left one screen then pick up the KEY and return to the lift. On level six move Parker out of the lift then move Lady P. Select the CLOCKWORK MOUSE and move left into the start of the next screen. Press fire and the CLOCKWORK MOUSE will switch off the laser and return to Lady P.

Once the laser is off, move left one screen and down two ladders, but wait at the top of the second ladder until the guard has gone to the right. Move right one screen and down two ladders. Set the switches to the following: UDUUDD. Move left. Select Parker then move him two screens left and down two ladders. Move left until you come to the ladder going up; climb this and the next ladder then move to the safe. Select the STETHESCOPE and open the safe. Pick up the KEY and move down two ladders. Wait at the top of the second ladder until the guard goes right.

Go down two ladders until you come to the switches, these should be set as follows: UDDDUU. Move right until you come to a room with a safe. Select Lady P and move left then down two sets of ladders. Go left and pick up the KEY. Go right one screen. Don't go into the next right screen because you'll die; move up two sets of ladders and go left to meet up with Parker. Use both keys on the drawers, then swap to Parker and use both keys on the other drawers. The safe will open; pick up the papers. You should now be given the code for your next mission.

Mission 4: The Hood's Lair

- Select the SHADES and the GLUE for Scott
- Select the SHADES and the GUN for Virgil

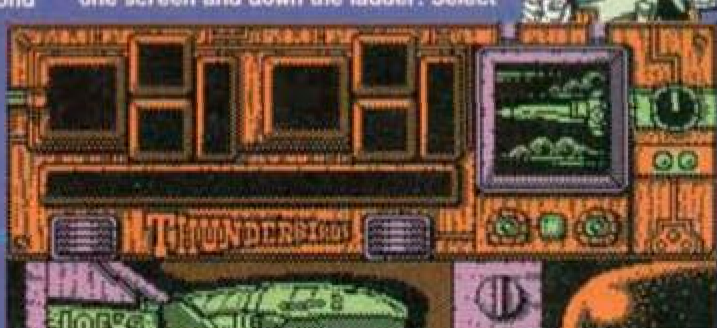
The SHADES protect you from the guards after you pass the force field.

Move Scott right two screens and position him behind the piano. Select Virgil and move him two screens left. Drop the SHADES and the GUN near the piano. Go up the ladder and collect the KEY. Go left one screen, stand to the right of the left-hand bedside lamp and press fire. Now go left a little and you should see the SHEET MUSIC. Pick this up and go right one screen and down the ladder. Select the KEY then go to the piano. Press fire to use the KEY. Now pick up the furthest-away item which you left there earlier. Select the SHEET MUSIC, return to the piano and press fire. Collect the remaining item and stand with Scott behind the piano.



Once the piano has moved down select Scott and the GLUE and move right a little. Press fire and the GLUE will land on the floor. Move Scott two screens left and pick up the LIMPET MINE. Return to Virgil and the guard should be trapped on the GLUE. Move both players right and down until they come to a force field. Select Virgil with the GUN and fire three times; the force field will disappear. Move both players right one screen, up one screen and right two screens. There should be a ladder on this screen. Select Virgil, move him right three screens, down one, left one, down one, right one, down one and right one screen. Press the red switch on the wall.

Select Scott, move him up the ladder, right one, up one, left one, up one and right three screens. Drop the shades and pick up the SECRET FILM. Now go left one screen and throw the red switch. Move left one screen – on the wall at the left-hand side of this screen is where you deposit the LIMPET MINE to complete the mission and the game.



Thunderbirds might have saved hundreds of lives, but all those fumes were environmentally unfriendly.

Multiface Pokes

6E48,00	Infinite time for mission 1
5FFC,A7	Infinite time for mission 2
57C6,A7	Infinite time for mission 3
5746,A7	Infinite time for mission 4

Passwords

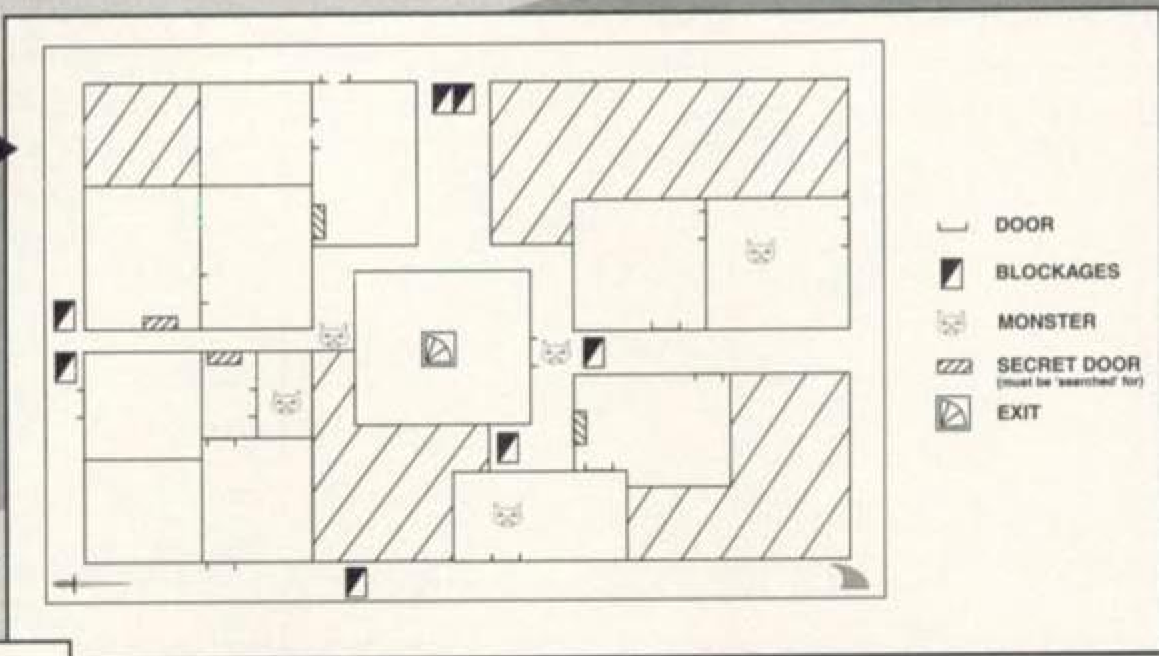
Mission 2	RECOVERY
Mission 3	ALOYSIUS
Mission 4	ANDERSON

CHEAT MODE SPECIAL

HeroQuest

If you're going on a quest you need a map. Here are all the maps you'll ever need for HeroQuest.

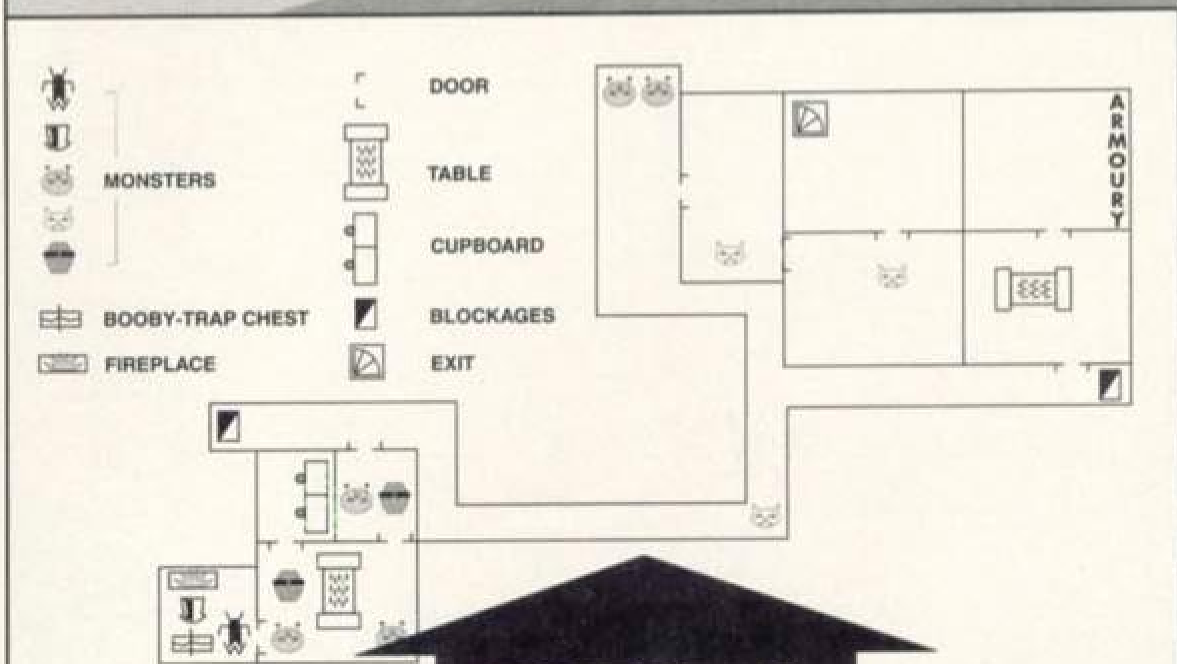
QUEST 1



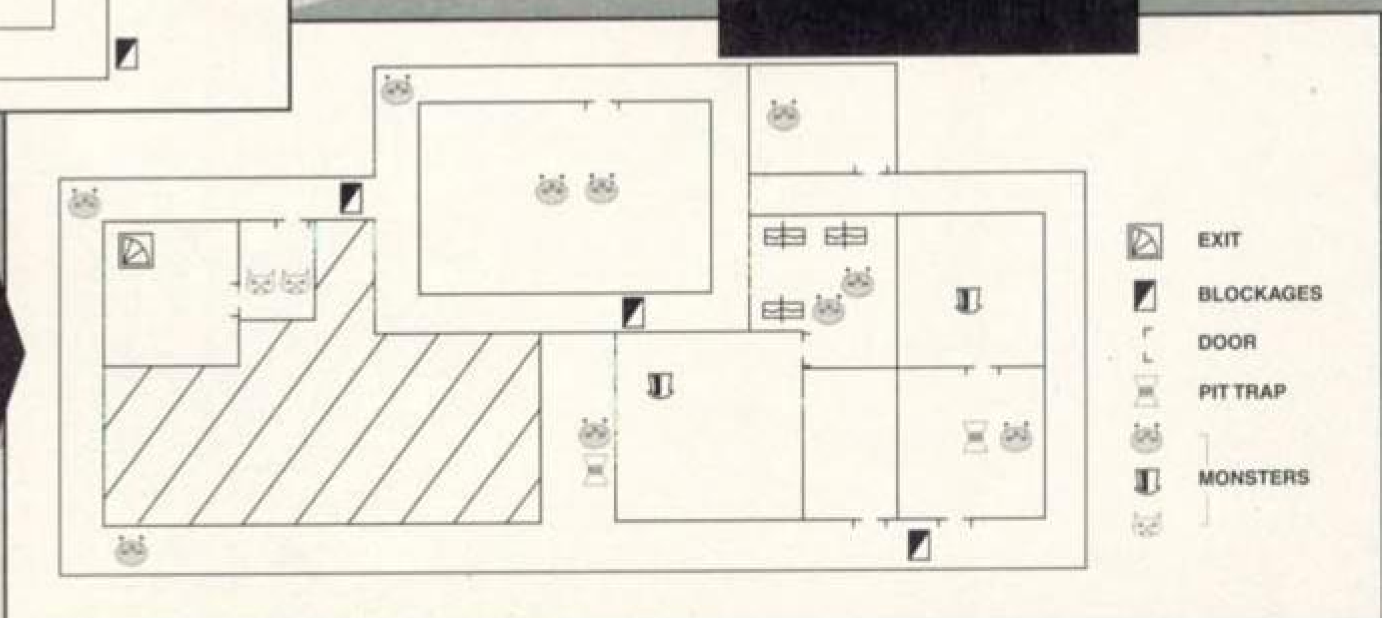
QUEST 2



QUEST 3



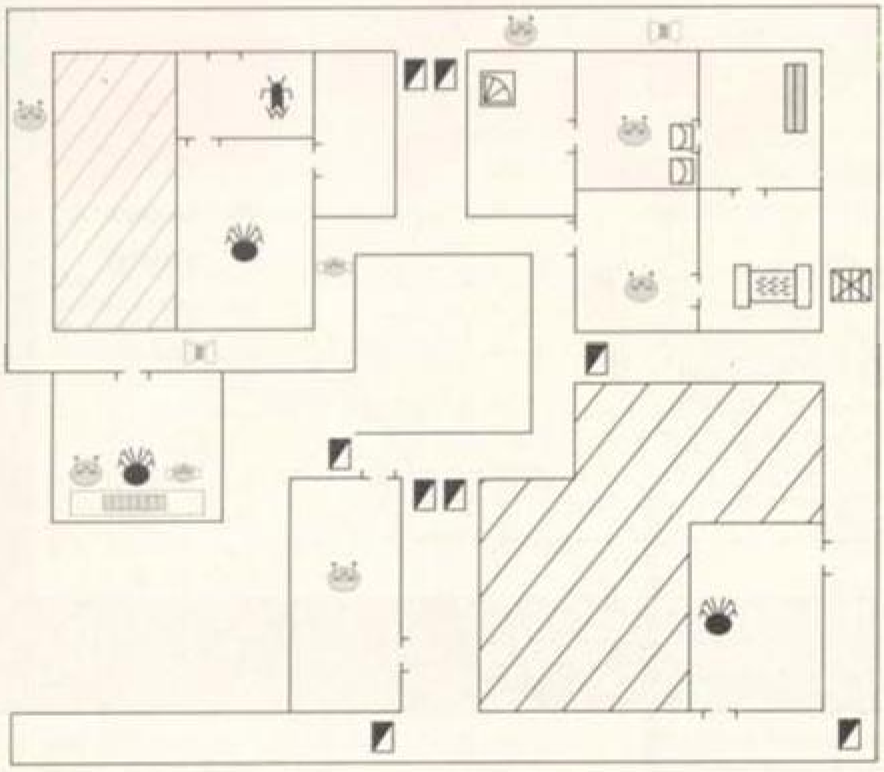
QUEST 4



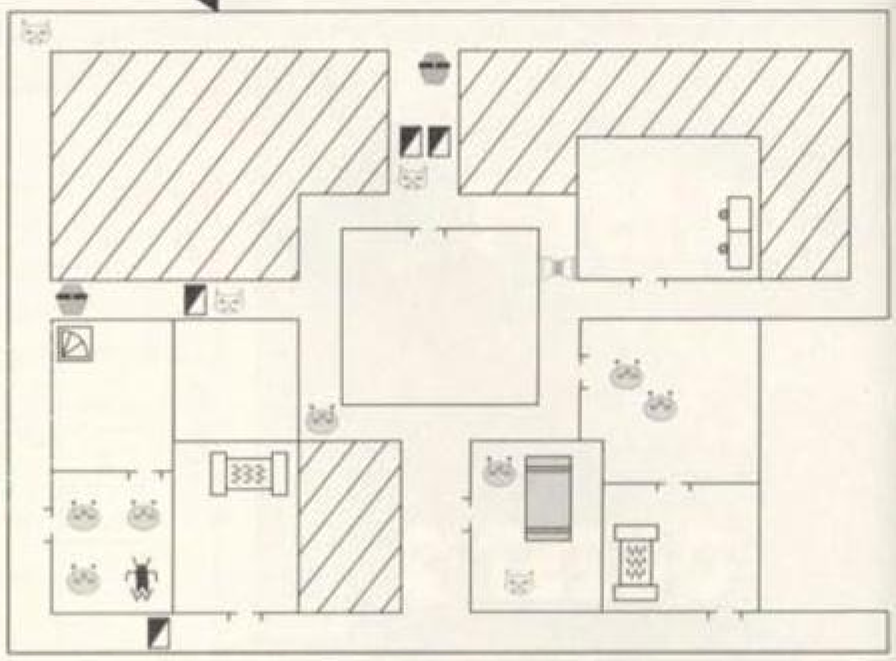
These maps were provided by... er... someone. We're not entirely sure who, because Lee lost your letter. So if their creator would like to get in touch, we'll give credit where it's due.

QUEST 5

EXIT
DOOR
BLOCKAGES
FALLING BLACK TRAP
PIT TRAP
TABLE
CHAIR
BENCH
BOOK CASE
MONSTERS

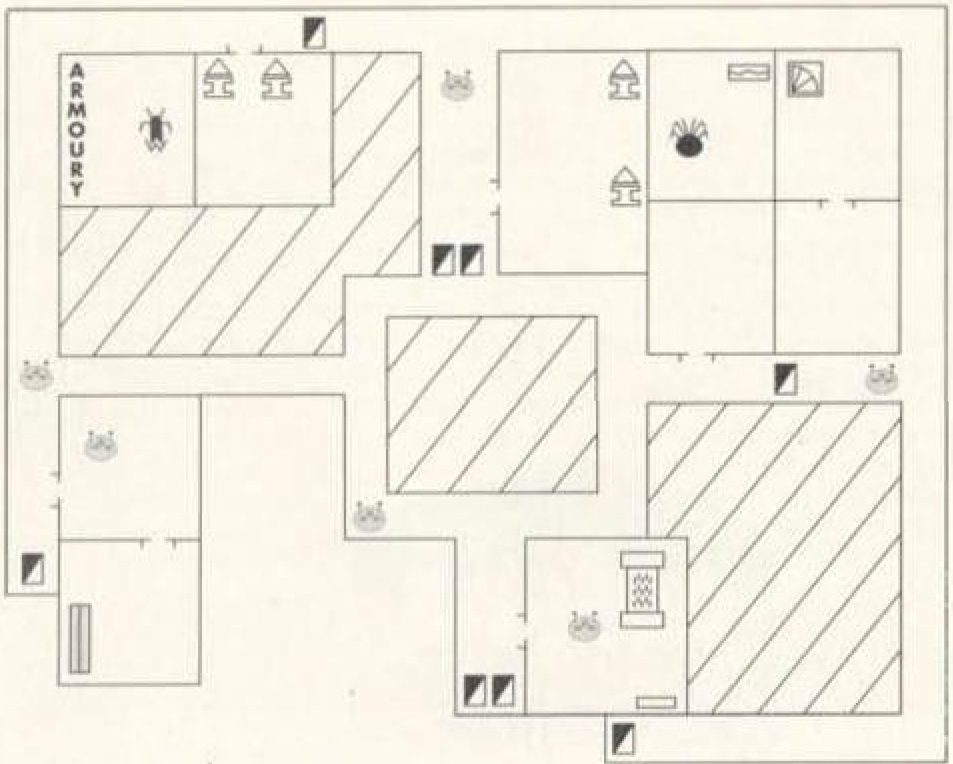


QUEST 6



EXIT
DOOR
BLOCKAGES
TABLE
PIT TRAP
TRESSLE TABLE
CUPBOARD
MONSTERS

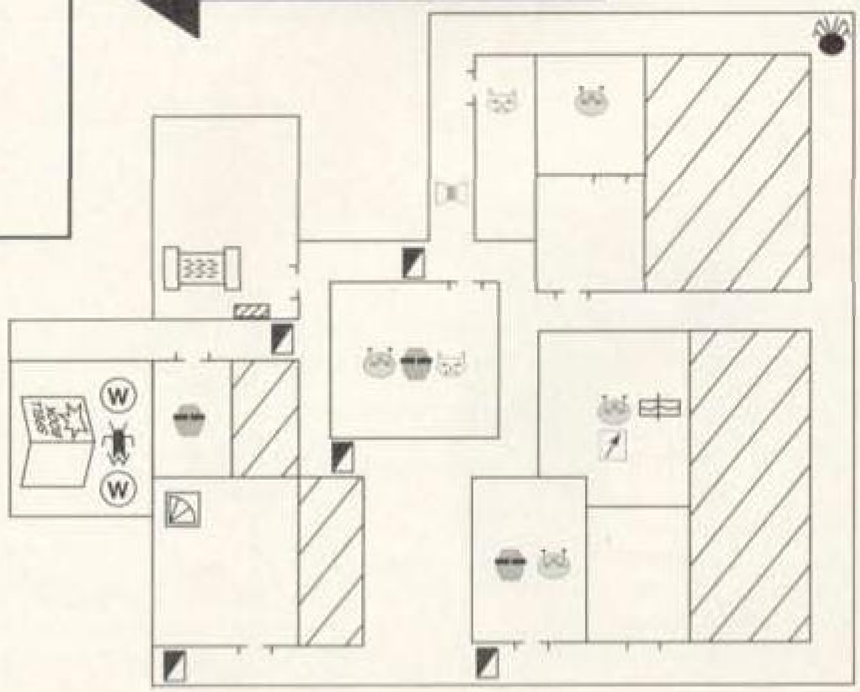
QUEST 7



EXIT
BLOCKAGES
DOOR
TREASURE CHEST
TABLE
BENCH

QUEST 8

SPEAR TRAP
TABLE
BLOCKAGES
PIT TRAP
BOOBY TRAP CHESTS
EXIT
SECRET DOOR
DOOR
MONSTERS



Cheat Mode Directory

A complete guide to every tip we've given out in Cheat Mode in the back issues of AA still available (66, 75-102) excluding multiface pokes because there were massive lists of them in issues 90 and 98.

Game	Type of cheat	Issue
A		
Advanced Pinball Sim	Keypress cheat	87
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Atom Ant	Keypress Cheat	94
Auf Wiedersehen Monty	Tips	93
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- Issue 66 contained a complete list of games featured in Cheat in every AA up to that issue.
- Issue 87 contained a keypress cheat special.

The Examiner

Planning to embark on an adventure? Then there's one vital piece of equipment you need in your inventory – Debby Howard's latest round-up of the CPC text adventure scene.

Angelicus Answer

REVIEW

Price: £2 on tape, £4 on disk.
Available from: WoW Software, 78 Radipole Lane, Weymouth, Dorset, DT4 9RS.
Crossed Cheques/Postal Orders payable to: JG Pancott.

You are Gamaluchad, a valued member of the Angelicus army. Once, a fierce war broke out when pirates invaded your planet, Angelicus. Fortunately they were defeated and you captured some of them. The leader, Captain Morgan, who has his headquarters on the planet Skully, could not be captured and you are sent back again to get him by fair means or foul.

This is a text-only GACed adventure written by M & MJ Crewdson and the sequel to the two-part *Angelicus Saga*. Fortunately you don't have to play the *Saga* adventures to enjoy this one (although you can get all three adventures for £6 on disk which is great value for money).

It comes with its own BASIC loader with the option to view the scenario and instructions. You can look IN, UNDER, etc and TALK TO any characters that you come across.

You start off inside a spaceship, and the first puzzle you encounter is how to get out; a careful examination of things around you will help you there. It's not an easy adventure to play, and the consequences of some of your actions may not be instantly obvious, because often the solutions to problems lie some way from the problems themselves, but logical thought should reveal the solutions.

It's worth saving your position often as you'll probably meet with a few untimely deaths or only have several moves to do something.

The only really annoying thing that I found was the part where you have to get the right colour bear from the booth; this section seemed to drag on forever, and I seemed to have every colour except the colour that I wanted. Frankly, it just became very frustrating.

But this is a minor quibble in a decent adventure which should keep you tapping away happily on your keyboard for some time.

82%



Here we have the '53 Model T Ford Starbird coupé. Good mileage to the gallon, but the steering's a bit lumpy.

Where to go

If you're looking for new and re-released adventures, then drop these people a line (enclosing an SAE of course) for their latest stock lists.

- **WoW Software, 78 Radipole Lane, Weymouth, Dorset. DT4 9RS.**
- **Adventure Workshop, 36 Grasemere Road, Royton, Oldham, Lancashire, OL2 6SR.**
- **Amstrad Adventure Solution Service, 10 Overton Road, Abbey Wood, London, SE2 9SD.**

Lords & Ladies of Adventure



If you're stuck on one of the games listed below, these kind souls are willing to help you. Please remember to enclose an SAE with your enquiry and DON'T ask for a full solution, as you might be disappointed. If you want to become a Lord or Lady please write in with a full list of the adventures you've completed.

- ***Adult 2, Boredom, Can I Cheat Death?, Doomlords I-III, Dungeon, Firestone, Jason & The Argonauts, River, Spacy, Tizpan, Welladay*** **– Stuart Mainland, 2 Douglas Road, Coylton, Ayr, KA6 6JJ.**
- ***Avon, Forest At World's End, Hollywood Hyjinx, Kobyashi Naru, Mordon's Quest, Scapeghost*** **– Angela Allum, 22 Point Royal, Bracknell, Berkshire RG12 7HH.**
- ***Knightmare, Kobyashi Naru, Rebel Planet, Who's Afraid Of The Balrog?*** **– Ross Younger, 3 Cammo Parkway, Edinburgh, EH4 8EP.**
- ***4th Protocol*** **(parts 1 &2),** ***Knightmare, Mega Bucks, N.E.X.U.S.*** **– Andy Riddings, 10 Berkshire Street, Chaddesden, Derby, DE21 6SQ.**

Cluepot

Revenge Of Chaos

The beach: take the axe and EQUIP it. Get the gold chain – it's treasure.
The great valley: you can take the slave with you, but he's not essential.
Rubbish pit: get the lantern and the ring (yet more treasure).
Wrecked house: take the loaf of bread.
West corner of a rubble road: Give the bread to the starving woman.
One-room house: take and EQUIP the sword. You can now drop the axe because the sword is a much better weapon.
The inn: don't drink the wine because you'll get drunk and won't be able to continue.
The cellar: get the tooth (treasure).
Narrow path between damaged buildings: move the plank to gain further access.

A-Z Encyclopaedia

Amstradica Q-R

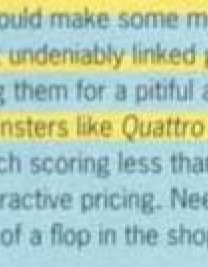
Somehow, they managed to escape. Somewhere between being written and getting printed Q and R made a bid for freedom, and succeeded. But their joy was short lived. We sent Camp Commandant Clur Hodgson out to hunt them down, and she brought them back alive. This is their story...

Q

Quartz Inside every Amstrad CPC there is a tiny quartz crystal that oscillates at exactly 4MHz (that's dead fast to you and me). Programmers use this crystal as an extremely accurate stop watch.

CLASSIC GAME

Q-Bert (Microbyte) Actually, this was called *Er*bert* on the CPC, but on every other format it's known lovingly by the name *Q-Bert* (and we needed a game to bolster up the Q section a bit, so we're prepared to bend the rules). It was a strange beast, in which a refugee from Magic Roundabout bounced around a series of pyramids floating in space, changing the colour of any tiles he stepped on. It was one of those games you either loved or loathed, mainly because of the weird diagonal control system – Dave loves it Simon loathes it, by the way.



Quattro Compilations (CodeMasters) For some unintelligible reason, the Codemasters decided that they could make some money by putting four sad but undeniably linked games on one tape and selling them for a pitiful amount of money. We saw monsters like *Quattro Sport* and *Quattro Combat* each scoring less than 60 per cent despite the attractive pricing. Needless to say they were a bit of a flop in the shops too.

Quit Many programs (*Protext* for example) allow you to exit the program and get back to CPC BASIC by using the quit command (we *are* getting desperate to fill out this Q section).

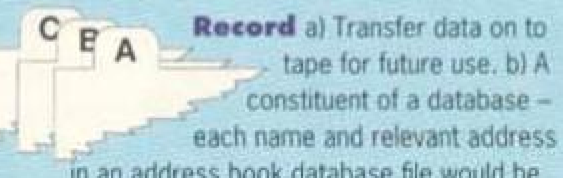
QWERTY The standard British layout of alphabetic keys on a keyboard, with the letters QWERTYUIOP on the top line. The original design for the layout was decided upon originally to stop people typing too fast for the early type writers (has it become apparent why we tried to sneakily miss out the Qs the first time around?).

Quotation marks When you're writing a program, if you surround a set of characters with quotation marks ("–") then computer treats them as an unintelligible string of data which it can add, print or store but not use as a command.

R

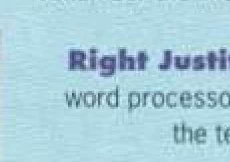
RAM This is an acronym that stands for Random Access Memory (and also another in a long line line of nudge, nudge, wink, wink, phnarr, phnarr computer phrases). This is memory to which data can be written and from which it can be read in any order. As soon as the power is switched off all the data stored in RAM will be irrecoverably lost.

Raster A method of presenting graphical images by a rapid succession of parallel line-by-line movements of a spot of light on the VDU (like the way a TV picture is displayed on your Hitachi 23-inch Nicam stereo telly). Much beloved of demo coders. In fact try and find a demo that doesn't use them. If you do, keep it safe – it's probably a collector's item.



Raster bars – the staple diet of demos.

READ A programming command that orders the computer to retrieve data from a data line and store it in the computer's memory ready for use when the time comes.



Record a) Transfer data on to tape for future use. b) A constituent of a database – each name and relevant address in an address book database file would be talked about as an individual record.

RENUM Short for RENUMBER, if a program's line numbers are a little erratic RENUM will renumber the lines in steps of ten.

Right Justified Text When you're using a word processor or DTP package you can justify the text to the right like we have here.

Rik the Roadie We choose to remain silent on the grounds that we might otherwise incriminate ourselves. Next...

REM An abbreviation of the word REMARK. REM statements in programs are used for signposting sections of programs for the programmers own use; the computer will ignore the line completely. They are handy for marking out sections within longer programs which makes bug hunting a darned sight easier.



REM – sorry, but we just couldn't resist it.

ROM Stands for Read Only Memory. If data is stored on a ROM chip then it cannot be altered. Preservation of a ROM chip's data is not dependent on the supply of power like the RAM memory. You usually buy with ROM chips with the programs already 'blown' on to them (the process of 'programming' a ROM chip is known as ROM blowing). If you buy a ROM chip for you CPC, for example, MAXAM, then you need a ROMbox in which to install it. These are little black boxes that will usually take up to eight ROM chips that plug into the back of your CPC.

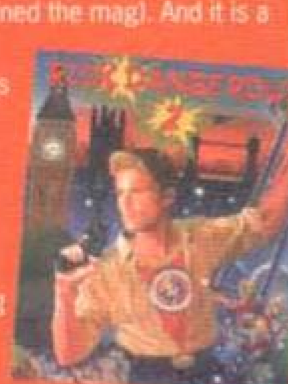


RS232 interface The industry standard serial interface cable, used to connect almost everything to everything else.

Rutabaga A Swedish turnip.

CLASSIC GAME

Rick Dangerous 2 (Kixx) One of our Ed's favourite games (you might have noticed the amount of totally gratuitous references it has been getting since he joined the mag). And it is a mightily fine platformer, which brilliantly combines cartoony graphics and first rate sound with engrossing gameplay that challenges your joystick skills, sense of timing and puzzle solving abilities. It's a also very big and very difficult.



PERIPHERALS

ROMBO ROMBOARD
Now only £25.00

The most widely used of all Romboards. 8 sockets each with an on/off switch; high 8 or low 8 ROM slots selectable; facility for a ZIF socket or 16k RAMROM.

DISCOUNTS
20% with the Dual-Mode Disk Drive
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VIDEO DIGITISER
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(see also D.I.Y. Kits)

This is the ROMBO VIDI. It captures pictures from any video source such as a video recorder, camera or another computer and saves them to disc. The pictures can be manipulated in many ways. Pictures can be imported into standard packages like Stop Press, Advanced Art Studio, etc.
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32k RAMROM - £14.95
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32k of RAM that thinks it's two ROMs. When loaded with ROM software, each 16k block behaves exactly like a ROM, even surviving resets, until the computer is turned off. Its primary purpose is to test ROM software during development, making the blowing and erasing of EPROMs unnecessary.

EPROM PROGRAMMER
with ZIF socket....................£30.00
with EJECT socket.................£35.00

Programs 8k and 16k EPROMs; 12.5v and 21v type; full or part EPROM or single bytes. ROM file editing. Supplied with easy to use menu driven disc software, PD games ROM file, ready to blow, and utilities to turn BASIC and machine code programs into ROM files.

ROMONOFF SWITCH £7.95
(see also D.I.Y. Kits)
Connects to the expansion port to turn all external ROMs on or off as needed. It is not suitable for a 464 with an external disc drive interface as the disc ROM would also be turned off.

$3\frac{1}{2}$" DUAL-MODE DRIVE

Winner of the Best Disk Drive award Amstrad Action

The above statement is untrue. Amstrad Action never presented such an award. Don't be deceived by any such statement wherever you might see it.

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Full, unimpeded use with RODOS, RAMDOS, ROMDOS and ROMDOS XL, giving up to 800k per disc without the need to use the drive's clever side switch. Full 800k use of MS800 (see below).

OVERALL
Ultra quiet TEAC mechanism: can be used as a 1.4Mb drive on other computers; super small; separate power supply included; sleek, sturdy metal case. You need to buy nothing else to use your drive immediately. There is a 20% discount on the ROMBO ROMBOARD if it is purchased with the drive.

This drive is not suitable as a 161 1st drive.
Suitable as a 161 Plus 1st drive with an interface.
This drive is not suitable as a 464 1st drive.
Suitable as a 464 Plus 1st drive with an interface.
Please state your computer model when ordering.

£79.95 complete

MS800 - high capacity disc system
Simply the best and not without many good reasons. MS800 stores up to 400k on each side of a 3.5" disc - making a total of 800k. Each side has its own directory so discs full of small files can still fit their directories on the screen. MS800 makes stand alone discs.

MS800 is the ONLY system:
that does not need to be present for the discs to be used, that is compatible with all software including CPM, that uses no memory at all, that can use its discs in drive A (ABBA switch users) and that works with the Plus machines.

It is supplied with its own copying utility and a program that allows many uncooperative games to run from drive B. Check out all these features against the rest and you will see why MS800 is simply the best.

MS800 on disc or ROM..................................£9.95

UTILITIES

BONZO SUPER MEDDLER 13.95
Superb tape to disc transfer utility. Deals with most forms of protections. Massive and increasing database of verified transfers. *STAND-ALONE* transfers.

BONZO BLITZ 13.95
Transfers all forms of SPEEDLOCK tapes onto disc, producing *STAND-ALONE* transfers. Large database of verified transfers. Includes 4 FREE adventures.

BONZO'S FLASHPACK 9.95
Over 60 powerful additions to BASIC for use within your own programs. Produces stand alone programs. i.e. Flash Basic does not need to be present for the programs to run.

BONZO'S BIG BATCH 9.95
Fast, flexible DATABASE, superb POOLS PREDICTOR, SCREEN and SPRITE DESIGNER.

MAXIDOS 13.95
The most comprehensive and effective of all CPC disc utilities. All functions work with AMSDOS, CPM, RAMDOS and ROMDOS formats.
Functions include:- disc/file copy, optimise discs speeding up accesses by up to 50%. CAT includes erased files, erase files, unerase files, disc editor, format, CAT file information, identity format, kill files, rename files, print CAT, set user numbers, make files Read Only, ReadWrite, System and non system, backup discs, verify discs, archive discs to tape and much more.

22DISK (Shareware) 5.00
The premier CPC to PC to CPC file transfer utility. Works with AMSDOS discs and one of the MS800 formats so your program's data discs can simply be taken straight to the PC for file transfers. 22DISK runs on the PC.

ROM SOFTWARE

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PROSPELL	£25.00	MAXAM	£30.00
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RS-232 (dual-channel)
with comms software
by the designer of the PACE RS-232
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ABBA SWITCH	12.95
SIDE SWITCH (plug-on)	5.95
ABBA & SIDE combined	14.95
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3.5" discs ...... 10 for £7.50;	30 for 20.00
3.5" locking disc box (40)	7.95
64k RAM PACK (DkTronics)	39.95

D.I.Y. KITS

All kits marked * require alterations to your computer's circuit board. If you are not comfortable with this, don't buy the kit.

Kits that are not stated as machine specific work on all machines.

All kits are supplied with diagrams and full instructions.

VIDEO DIGITISER.......................46.00
This is the full ROMBO VIDI and includes everything you would receive if you bought it ready made.

32k RAMROM.......................TBA

SIDE SWITCH.......................3.00
(alteration to your disc drive's cable)

ABBA SWITCH*.......................3.00
3rd DRIVE SWITCH.......................7.50
Romonoff SWITCH.......................4.50
464-6128 CONVERSION*.......................45.00
This is the complete 6128 circuit board which includes the disc interface and the 128k RAM. The conversion is to replace the 464 circuit board with the 6128 one and the result is a 6128 in a 464 case. A disc drive is also needed.

6128 ROM*.......................25.00
6128 Plus TAPE socket*.......................18.00
(includes the REMOTE facility)
464 Plus DISC interface*.......................30.00
464 Plus extra 64k RAM*.......................15.00

We will fit the following kits for you if you send your computer to us:-
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6128 Plus TAPE socket.......................30.00
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All prices include carriage
SAE for fuller details of these kits

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Data transfers PC<>CPC/PCW (per disk)	

SAE for CPC catalogue. PCW and PC business software also available, please request a catalogue

Send Cheques/POs stating computer type. Add £1.00 P&P (£2 max)

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With many objects to use including Light-Sabres, Medi-Kits, Energy Pills, Trackers and Teleport Rings, this strategy game will keep you glued to your computer for days. And with a different map generated every game you can be sure of a new challenge every time.

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Next Month



Copying devices

Are they pirating devices that are killing off the CPC, or are they keeping the scene alive?

If the software companies don't sell the game you want any more, then why shouldn't you be able to copy it? We ask programmers, software companies and retailers for their views on the controversial subject of copying software.



PLUS

- At last! The definitive review of Radical's platformer ***FLUFF***.
- Campursoft's on-disk machine code tutorial, ***BASIC IDEA*** – reviewed.
- ***NEBULUS*** – A 93 per cent-winning Mastergame adorns on the covertape.
- Pages and pages of ***GAMES CHEATS***.
- Reams of ***TECHNICAL TIPS***.
- ***BASICALLY BASIC*** part 3 – programming made easy.
- All the latest ***NEWS*** from around the CPC world.
- ***The GOOD, the BAD AND the UGLY*** of shoot-'em-up games.
- More ***TYPE-INS*** for you to... er... type in.

Write this date down in your diary or tie a bit of string around your finger. Do whatever you have to do, just remember you can get the next issue of AA on:

Thursday 17th March 1994